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ABSTRACT

Surveys of 380 Wisconsin farm households taken in 1953, 1963 and 1973 documented social, attitudinal, institutional and technological changes over a 20-year period, and suggested some basic trends in neighborhood and kin contacts, farm-practice adoption, attitudes toward education, and participation in voluntary organizations. Educational trends revealed a reorganized district structure from over 5,000 one- and two-room school districts to approximately 350 K-12 comprehensive community school districts: emphasis on higher levels of teacher training: transportation of pupils for long distances: provision of specialized pupil services: increased educational aspirations of parents for their children: and increasing acceptance and support of compulsory attendance laws, elementary and high school programs, school organization and reorganization, pupil transportation, school lunch programs, teacher training, and parents' organizations. Rate of neighborhood and kinship contacts remained surprisingly consistent overall: exchange of work with neighbors decreased and exchange of work with relatives increased. Of 15 farm practices surveyed, adoption of soils and crops practices generally had increased, while dairy-practice adoption had decreased. Overall participation in voluntary organizations increased slightly: most households belonged to a religious organization, with membership in cooperatives having the second highest percentage: households showed a notable lack of membership in ethnic and political organizations and social clubs. (NEC)

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Agricultural, Social and Educational Change in Rural Wisconsin 1953–1973

JAMES A. DUNCAN and HARRIETT MOYER

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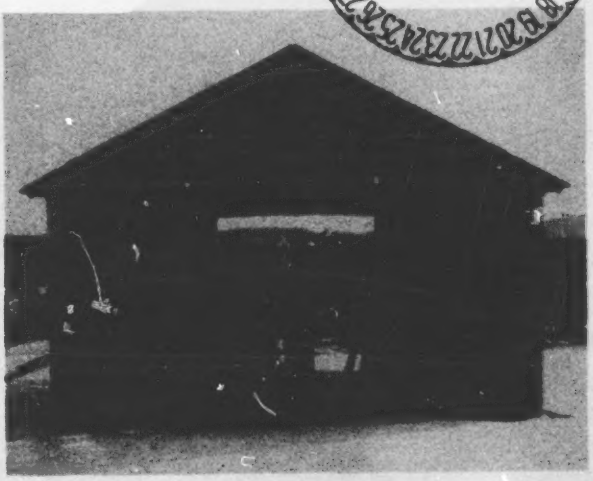

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Doctoral dissertations and masters theses have been written by graduate students reporting original findings on various research problems. The original data from the first interval, 1953, was analyzed by the senior author of this paper. Follow-up studies were reported by Wesley Maugh, Paul Butterfield and Rex G. Krull in 1963 and 1964. A doctoral dissertation analyzing data from all three intervals was written by A. N. M. Shamsuzzoha in 1979 on changing attitudes toward rural education.

A special recognition goes to Nancy Anderson Clement, Research Specialist, 1974-1976, who coded and prepared the materials for the computer analysis used in determining the longitudinal trends.

Social Change in Rural Wisconsin

INTRODUCTION

"The only thing constant is change," goes an old maxim. Social and technological change is much discussed today among sociologists and educators. Basic institutions, such as the family, the church and the school, appear to be undergoing rapid change.

Rural neighborhoods are thought to have all but disappeared, and concern is expressed over the demise of the family farm. Businesses and newcomers are entering nonmetropolitan areas. There is no doubt that change is taking place but in what direction and how fast?

Seldom are consistent, longitudinal data available. This monograph contains a body of educational and social information obtained through surveys of a sample of Wisconsin farm households taken in 1953, 1963 and 1973. The researchers returned to the same farmstead each time. Thus, the data represent a unique opportunity to document attitudinal and institutional changes in rural Wisconsin over a 20-year period.

The original study was designed within a socio-cultural framework to document changes in educational attitudes and behavior. Because of the original researchers' awareness of the importance of the entire social fabric to their major concern, a wealth of data are available on social participation at family, neighborhood and community levels.

This report is an attempt to assess some social and technological changes occurring in rural Wisconsin neighborhoods during the past 20 years. We identify some basic trends in neighborhood and kin contacts, farm-practice adoption, attitudes toward education and formal organizational participation.

SUMMARY OF FINDINGS

A summary of the findings in each of the major sections is presented here. Each of the sections gives more detail and explication than the following summary. Overall conclusions and implications of the work are presented after the major sections.

Although the theoretical framework varies according to the topic of analysis and some sections are essentially descriptive, the cohesiveness of the analysis comes from the consistent concern with evidence of social change over the past 20 years within the sample of Wisconsin farm families.

Trends in Neighboring and Kinship Contacts

Ten items pertaining to various neighborhood activities and eight items relevant to kinship contacts were used. A surprising consistency over the 20 years was found. Mean number of neighboring activities changed only from 5.4 to 5.2, while mean number of types of kinship contact increased 3.8 to 3.9. The rate of contact has remained quite constant, but the type of contact has changed somewhat. For example, exchange of work with neighbors has dropped precipitously, but the exchange of work with relatives has increased.

Neighborhoods that remained homogeneous in religious and ethnic background over the 20 years maintained consistently higher rates of both kin and neighborhood contacts than did changing neighborhoods. Panel members, those interviewed at all three points in time regardless of type of neighborhood, participated in more neighboring activities than did non-panel members.

Those of German ethnic background were higher on both neighboring activities and kinship contacts than those of Norwegian heritage at all three points. Religious affiliation had no effect on the rates of interaction with neighbors and kin.

Changing Farm-Practice Adoption

Trends in 15 farm practices—nine in soils and crops and six in dairy—were investigated. The highest level of adoption at all three points in time was the use of fertilizers on corn grown for grain. Four soils and crops practices showed significant increases. One dairy practice, "testing cows for production," showed a significant drop.

Panel members in both homogeneous and heterogeneous neighborhoods showed significant drops in the general farm-practice index of adoption between 1953 and 1973. This index was based on all 15 farm practices. When the soils and crops items were separated from the dairy practices, it was found, in general, adoption of crops and soils practices had increased for all groups, while dairy-practice adoption had decreased for all groups between 1953 and 1973. Some of this drop is attributed to the age of the farmers in the study.

Residents of the three neighborhoods that were homogeneous over the 20 years tended to adopt all categories of farm practices at a slightly higher level than those living in changing neighborhoods.

Individuals of German background showed a slight increase in farm-practice adoption over the period, while those of Norwegian background showed a slight decrease.

Educational Behavior

Changing attitudes and behavior toward rural-school programs and practices were investigated. Items were based on the following school-program categories: elementary school program, school organization and reorganization, pupil transportation, school lunch program, the high school program, teacher training and parents' organizations.

Ten items relating to teacher training, pupil transportation, educational aspirations and school equipment and services gained in acceptance.

Slight change was indicated relative to four items: (1) the importance of art, music and recreation, (2) the neces-

sity of modern conveniences in the school, (3) the effect of school reorganization on taxes and (4) the length of time children should be on the bus on their way to school.

The data revealed decreasing or erratic acceptance regarding (1) provision of health services to the school, (2) parents helping teachers to plan what is taught and (3) satisfaction with the way schools are operating in the district.

Trends in Participation in Voluntary Organizations

This section focuses on overall trends in participation in voluntary organizations. Ethnicity, religious preference and longevity in the neighborhood were examined for their effects on participation.

Overall participation, as measured by memberships in organizations per household, remains relatively stable, increasing only slightly over the 20 years. The largest percentage of farm households belonged to a religious organization at all three points. Memberships in cooperatives accounted for the second highest percentage. There was a notable lack of memberships in ethnic organizations, social clubs and political organizations.

Length of residence in a given neighborhood appeared to have little significant impact on organizational participation. Catholic households held fewer memberships in organizations than did Protestant households over the past 20 years. Also, Protestant households consistently held more memberships in educational organizations. Those of Norwegian ethnicity held more memberships than those of German heritage at all three points.

PURPOSE AND DESIGN

Personal experience and scientific studies reveal that cultural groups differ widely in their attitudes toward selected rural educational programs and practices. These attitude differences are expressed in the form of varying degrees of acceptance of specific educational programs and practices as represented by the schools, farming programs and formal organizations. For example, other researchers have reported that certain ethnic groups [1,2,3] express greater acceptance toward specific educational programs than do others.

The acceptance of an educational program or practice by an individual or group is greatly conditioned by socio-cultural background. Factors, such as ethnic and religious composition, strength of family and primary-group ties, and values placed on education, occupation and economic conditions, strongly influence attitudes toward education.

Through the examination of cultural characteristics and their relation to educational behavior and social interaction within the neighborhood, this study assesses the impact of change taking place in the rural environment, particularly in educational programs and social institutions. Specifically, this study provides an analysis of changes in behavior and attitudes of selected farm families toward agricultural practices, school and adult education programs, organizational participation, and kinship and neighborhood contacts over a 20-year period.

Knowledge of the cultural, social, educational and economic factors associated with the farmer's acceptance of agricultural practices and his participation in community organizations is a useful tool to all agencies and leaders working with rural citizens. This study synthesizes a body of knowledge accumulated in a long-range study that was initiated in 1953. The initial phase of the study analyzed the acceptance of farm, school, adult education and organizational practices among selected farm residents in defined neighborhoods. A 1963 study of the same residents in the same neighborhoods analyzed changes over the period 1953 to 1963. In 1973, the residents of the same farmsteads in the same neighborhoods were surveyed again to investigate the same set of practices and programs. Thus, changes taking place within the same geographic area were documented on a longitudinal basis. This documentation provides a more substantial base for planning and decision making and allows for the testing of some hypotheses of social change. A measure of change in cultural, agricultural and educational behavior within precisely defined respondent groups living in a neighborhood under given social and economic conditions provides a systematic, theoretical base for studying change.

The purpose of this monograph based on the longitudinal data bank is stated in the following research questions:

1. What changes have occurred in educational behavior and attitude on selected Wisconsin farms over the period 1953 to 1973?
2. Is there a difference between residents of homogeneous and heterogeneous neighborhoods in the adoption of educational practices and programs over the period 1953 to 1973?
3. Is there a difference in the educational behavior of residents who are classified as panel members and those who are non-panel members?
4. Is there a difference in farm-practice adoption and attitudes toward school programs between the major Wisconsin ethnic-religious groups over the period 1953 to 1973?
5. What are the trends in neighboring and kinship contacts in selected rural Wisconsin neighborhoods over the period 1953 to 1973?
6. What are the trends in participation in voluntary organizations among selected groups of Wisconsin farm families?

METHODOLOGY

Topics Investigated

The topics investigated over the 20-year period are: (a) school practices and programs, (b) agricultural practices, (c) organizational participation and (d) neighbor and kinship contacts. When the first phase of this study was initiated in 1953, 19 matched pairs, or 38 rural neighborhoods, were selected. The base neighborhood of the matched pair was selected for the homogeneity of its ethnic and religious characteristics. A comparable neighborhood was

selected and matched on the basis of the heterogeneity of these two cultural features. The selection criteria for each matched pair of neighborhoods were: (1) size in square miles, (2) distance from city or village, (3) type of farming, (4) type of school district, (5) number of children of school age, (6) population density, and (7) property values.

SAMPLE SELECTION

A list of all heads of farm households was prepared for each neighborhood. Ten farm families were selected at random in each neighborhood by entering a table of random numbers. One of the household heads (either husband or wife) was personally interviewed. A total of 380 respondents were interviewed with a pretested instrument. Follow-up studies were made in 1963 and 1973 of the same matched neighborhoods, utilizing the same farmsteads and interviewing the household heads regardless of who lived there. If the previous farmstead was vacant or removed, a list of all farmsteads with table of random numbers was used to select an alternate farmstead within the same neighborhood. The same pretested instrument was used with slight revisions incorporating updated practices and program terms.

A panel of 91 heads of households, who were interviewed in 1953, 1963 and 1973, and who lived at the same farmstead throughout the period, comprised the first group of respondents. This panel provided the opportunity to determine trends over time within the same neighborhoods. All respondents not in the panel are referred to as non-panel. The 289 non-panel respondents were interviewed one or two times.

RESPONDENT CHARACTERISTICS

Agriculture on the 380 respondent farmsteads of this study is principally dairying. The samples within the selected neighborhoods were drawn principally from counties in south-central and northwestern Wisconsin. The majority of the respondents were selected from 34 neighborhoods in Dane, Green and Polk Counties. Four of the neighborhoods were selected from Green Lake and Grant Counties.

The respondents selected in the 1953 phase of the study were heads of farm households, with 98 percent farming full time. The studies in 1963 and 1973 revealed that 88 percent and 87 percent, respectively, were still farming.

Family-farm ownership is a traditionally sought-after goal in rural Wisconsin. Family-farm ownership in this sample was 66 percent in 1953, 77 percent in 1963, and 90 percent in 1973. The average age of the respondents was 47 years in 1953, 49 years in 1963, and 52 years in 1973. While the 91 panel respondents were 20 years older in 1973, transfers of the farms to the next generation and younger farm families moving to the farmsteads of the initial respondents has kept the average age at a relatively low level. Family size remained fairly stable, with a mean of slightly over 3 children in 1953 and 3.4 children in 1973. At each interview, education of the wives in the sample averaged almost one year higher than their husbands. In 1953, the average wife had completed almost 10 years schooling, and the average husband just over 9 years. The wife had completed 10.6 years in 1963, while the husband had completed 9.6 years. In 1973, the average wife had completed 11.4 years of schooling and the average husband 10.7 years. These averages were comparable to those for Wisconsin as a whole.

The concept of the family-size farm dominates the study data, with the increase in size over the 20-year period corresponding closely to the average increase for all Wisconsin farms. Average farm size in this study ranges from 144 acres in 1953, to 152 acres in 1963, and to 169 acres in 1973. These averages are comparable to the mean sizes of all Wisconsin dairy farms at each interview: 143 acres in 1953, 170 acres in 1963, and 186 acres in 1973. (Wisconsin Statistical Reporting Service, 1977). Herds on the sample farms also increased at an average rate approximately equal to the average rate of increase for the entire state. The dairy farms in this study averaged 18 milk cows in 1953, 26 in 1963, and 29 in 1973. All Wisconsin dairy farms averaged slightly less with 17 milk cows in 1953, 24 in 1963, and 30 in 1973 (Wisconsin Statistical Reporting Service, 1977).

NEIGHBORHOOD SELECTION

The sociological definition of the neighborhood provides the *first* criterion for selection of the sample neighborhoods. Kolb's[4] work during the first half of this century is classic among researchers of the rural neighborhood. His definition of a neighborhood—"the first social group beyond the family to which people have a sense of belonging and a consciousness of identity"—clearly applies to the social environment existing in rural Wisconsin in the early 50s. Within the neighborhood, there are informal and formal relationships. The informal are primary, face-to-face relationships, such as visiting, exchange of work, mutual aid, etc. The more formal institutions, such as church, school and agri-business, are looked to for fulfillment of certain educational, religious, social and economic needs. Interaction among family members and next-door neighbors are major influences determining the formation and modification of educational attitudes.

The *second* neighborhood criterion was that of homogeneity and heterogeneity. The standards for homogeneity were adopted from those used by Hill[5] in development of the Wisconsin Ethnic Stock Map. Slocum[6] explained the selection standard by stating:

"It will be observed that in each of the theoretical districts, there is a variation of dominance, by intervals of twenty percent, ranging from less than forty percent at the margin to eighty percent or more at the core."

Only the areas on the Ethnic Stock Map in which there were 80 percent or more of one nationality and religion were used for selection of the homogeneous neighborhoods for the initial study. The heterogeneous neighborhoods were

selected from areas in which there were two or more nationalities, with neither predominating. Neighborhoods selected represented every major ethnic-religious group in the state: (a) German and Catholic, (b) German and Lutheran, (c) Norwegian-Lutheran, (d) Danish-Lutheran, (e) Swedish-Lutheran, (f) Polish-Catholic and (g) Swiss-Evangelical and Reformed.

Identification of neighborhood criteria was followed by field selection and delineation of neighborhoods. Interviews conducted by educational and agricultural officials were designed to (a) locate study areas, (b) identify patterns of association, (c) inventory neighborhood institutions and services and (d) assess local judgments on strength of group identification. Neighborhoods were tentatively located, and rural school teachers, school board members and local residents were interviewed in order to match the criteria with the existing conditions.

Geographic areas were delineated within which a population could be listed and random samples selected. The county plat book was the source for farmstead lists. The operational decision was made to identify neighborhood boundaries without losing the value of the neighborhood as a research area. The rural elementary-school district, or districts within the neighborhood area, constituted the major core of the neighborhood and was deemed feasible for research purposes. The rural elementary-school district was more compatible with the concept "neighborhood" than an area defined by any other criteria.

A number of homogeneous neighborhoods were delineated on the basis of their ethnic and religious composition. Each homogeneous neighborhood was matched with one in close proximity and possessing a heterogeneity of these two characteristics. The matching of these neighborhoods in terms of the two basic cultural characteristics set a dichotomous framework within which to compare educational behavior. These factors selected to measure the comparability of these series of matched pairs of neighborhoods were: (a) size in square miles, (b) distance from common city or village, (c) types of farming, (d) density of population per square mile, (e) type of school district organization, (f) number of pupils of school age and (g) equalized evaluation per school-age pupil.

One variation is the matching of a homogeneous neighborhood possessing a parochial school with the neighborhood possessing a public school. It was necessary to make this matching in order to have the homogeneous German-Catholic group represented in the study. The advantages gained by analyzing the attitudes of this major ethnic concentration far outweighed the limitations imposed by this criterion discrepancy.

INSTRUMENT DESIGN

The data-gathering instrument was developed in congruity with the purpose of this study, which is to identify the attitudes and behavior of a sample of rural residents, residing in the selected neighborhoods, toward (a) selected school programs, (b) farming practices and (c) formal and informal organizations. The selection of these three areas is based on the assumption that the farm family is vitally concerned with educating its children, making a living and fulfilling certain social, educational and religious needs by participating in available organizations and informal associations.

School Programs and Practices

A review of a number of attitude-opinion studies and consultations with rural school authorities revealed school programs and practices from which pertinent attitude questions could be developed.

Seven areas within the school program were identified for analysis. These were: (a) the elementary school program, (b) school organization and reorganization, (c) pupil transportation, (d) the school lunch program, (e) the high school program, (f) teacher training and (g) parents' organizations. Thirty questions were prepared to elicit responses of opinion, belief and action within these seven areas which would reveal the degree of acceptance and the changing nature of educational attitudes.

Farming Practices

An index of 25 farming practices applicable to dairy farming was utilized to determine farm-practice adoption behavior. The practices identified were those proven through research and Extension at the College of Agriculture of the University of Wisconsin, and recommended by the county agricultural agents to farm operators. In addition to examining overall adoption behavior, single practices were analyzed.

When the final index of farm practices was developed in 1973, it was necessary to make a stringent selection of single practices. Those practices which were continuously recommended by University of Wisconsin–Extension from 1953-1973, and applicable to the respondents in the study, were selected for the final index.

A total of 15 farm practices were identified as applicable for all three interviews. Two farm practice indices were devised as a basis for analyzing changes in adoption on a longitudinal basis. One was a crops and soils index which included nine practices: (a) contour strips, (b) soil testing, (c) top-dressing old pasture, (d) renovating old pasture, (e) herbicide use, (f) fertilizing corn, (g) nitrogen side-dressing of corn, (h) putting up grass silage (high-moisture silage) and (i) using haying equipment.

The other was a dairy index which included (a) testing cows for production, (b) method used for testing, (c) artificial insemination or use of purebred sires, (d) clipping udders, (e) vaccinating calves for Bangs disease and (f) keeping farm records.

Each recommended practice adopted by a respondent was assigned a value of "1." A respondent's adoption score was calculated by totalling the number of practices adopted.

Formal and Informal Organizations

Participation in formal organizations was measured by membership in specific organizations. Two subgroups, farm and educational organizations, were analyzed. Included in the farm organization subgroup were: Farm Bureau, Farmers Union, National Farmers Organization, Breeders' Association and Cooperatives. Organizations and activities included in the educational organization subgrouping were: Extension Homemakers, 4-H Club, veterans training, school-board membership and Parent Teachers' Association. Membership in each organization was given a weight of "1."

NEIGHBORING ACTIVITIES INDEX—A measure of neighborhood strength was determined in this study by investigating the extent to which the respondent and neighbors engaged in certain activities.

The neighborhood-strength characteristics used in this study are adapted from Alexander and Nelson.[7] The neighboring activities index was based on the following 10 items:

1. Do you help each other in times of illness, death and other emergencies?
2. Do you visit with other families, and do they visit you?
3. Do you exchange tools and machinery with your neighbors?
4. Do you exchange work with your neighbors?
5. Do you borrow and lend food, money and other items?
6. Do you have picnics with your neighbors?
7. Do you go hunting and fishing with your neighbors?
8. Do you play cards, horseshoes, baseball, etc., with your neighbors?
9. Do you tell each other your hopes and plans for the future?
10. Do you repeat jokes and stories about persons in the neighborhood?

Affirmative answers to the items were scored "1;" all other answers were scored "0."

KINSHIP CONTACTS INDEX—The kinship-contacts index used in this study was based on the work of Wilkening.[8] The items included in this index pertain to the influence of parents, family circle and kin in: (a) keeping the farm in the family and encouraging children to stay on the farm, (b) being a source of knowledge about farming and homemaking and (c) maintaining social contact with relatives as compared to non-relatives.

After selecting the items, refining them and using them in a number of studies, Wilkening validated the index by item analysis, using the upper half-lower half method. The critical ratios of the differences for each item between the upper and lower half, ranged from 2.9 to 7.4. Wilkening's index of familism is based on the following items:

1. Inherited part or all of the farm.
2. Child should take over the farm.
3. Children ought to support parents in old age, if parents are not able to care for selves.
4. Kinship contacts: Most of relatives live nearby.
5. Most of relatives belong to same church.
6. Visit relatives more than non-relatives.
7. Exchanges work with relatives more than non-relatives.
8. Family keeps close contact with relatives not living nearby.

Affirmative answers to the items were scored "1"; all other answers were scored "0".

Trends in Neighboring and Kinship Contacts

The purpose of this section is to identify trends and changes in kin and neighborhood contacts over a 20-year period within different types of rural Wisconsin neighborhoods.

The increasing ease with which farm families can communicate and travel may have resulted in different rates and types of contacts between neighbors and kin. It is also possible that contact with both neighbors and kin may have decreased due to lessening need for labor due to higher levels of farm technology.

In order to present the overall pictures of trends in Wisconsin farm family affiliation, data on the number and type of neighboring activities and kinship contacts are given for the entire sample. This is followed by an analysis of trends within the neighborhoods. Neighborhoods homogeneous in ethnic and religious backgrounds are compared to heterogeneous neighborhoods. Comparisons are also made between panel members and non-panel respondents living within the two types of neighborhoods. In addition, neighborhoods which have remained constant at an 80 percent level of homogeneity in religious-ethnic variables are compared with those which were originally at the 80 percent level but have dropped to less than 50 percent in their homogeneity.

The effect of ethnicity and religion is further tested by comparing neighborhood and kinship contacts of families for the total sample.

Kolb's work on trends in country neighborhoods began in 1921 and continued through 1951.[9,10,11,12] Kolb focused his work in the 1950s on factors which led to the persistence (continued interaction) of neighborhoods. He concluded there was a general trend toward lack of persistence in rural neighborhoods. In regard to neighborhood functions, he found that economic and social contacts had increased in importance, while educational and religious functions remained about the same. Nationality and topography had decreased in their importance to the continuance of rural neighborhoods.[13] Types of contacts between neighbors have been emphasized in both past and present work as being important to the existence of a neighborhood.

Adams[14] reviewed much of the kin literature. He cited the trends toward studies on system inter-relations, such as those investigating the relationship between kinship and friendship, cross-cultural ties and the specification of variables. Neville[15] concluded that common ancestry plays a major role in unifying a group, and that common ritualistic practices are the key to the cohesiveness of the kinship group. Driedger[16] studied ethnic identification variables and compared groups of students from British, French, German, Jewish, Polish, Scandinavian and Ukrainian backgrounds. He found ethnic in-group identification to be lowest among those with Scandinavian and Polish backgrounds. Zeitlin[17] sketched the immigration patterns of Germans coming to Wisconsin and concluded that this group's experiences in Wisconsin left it with a "lasting sense of community."

In relation to the religious affiliation variables, studies have indicated that Catholics have stronger kin ties than Protestants.[18, 19]

OVERALL TRENDS IN AFFILIATION

Ten items pertaining to various neighborhood activities were utilized in the study. These items covered several social activities, mutual aid, such as providing assistance during emergencies, and economic functions, such as exchange of labor and tools. Overall, the percent of respondents participating in the neighborhood activities examined remained relatively constant with one major exception, the exchange of work with neighbors. (See Table 1.) The proportion of respondents who exchanged work with neighbors dropped from 71 percent in 1953 to 49 percent in 1973. Increasing levels of technology in farming operations is one obvious explanation for such a change. Only one other item had as much as a 10 percent change over the 20 years. Approximately 10 percent more of the respondents were sharing their hopes and plans for the future with their neighbors. Visiting with neighbors and giving mutual aid were the most often practiced forms of neighborhood affiliation. Mutual aid even showed a slight increase from 1963 to 1973.

Some change was evidenced in the percentage of the respondents who participated in the eight forms of kinship contact investigated. (See Table 2.) The most dramatic change was registered in regard to contact with relatives not living nearby. In 1953, 53.9 percent said they kept close contact with these relatives, and in 1973, the figure rose to 99.7 percent. Such change may be due to both migration and technological factors. Many of the respondents' relatives may have left the old neighborhoods over the 20-year period, thus increasing the probability of contacts being made with relatives not living nearby. The migration factor may also have contributed to the approximate 20 percent decrease in the percentage of respondents attending the same church with most of their relatives. Improved transportation and communication facilities are probably also contributing factors in these changes.

TABLE 1. NEIGHBORING ACTIVITIES

	Question	*(Percent of Total Respondents Answering Affirmatively)* 1953 (N=380)	1963 (N=340)	1973 (N=380)
1.	Do you help your neighbors in times of illness, death or other emergencies such as windstorms? (mutual aid)	90.24	88.96	92.25
2.	Do you visit with other families and do they visit with you?	85.68	83.33	80.75
3.	Do you exchange tools and machinery with your neighbors?	64.59	58.63	57.80
4.	Do you exchange work with your neighbors?	72.16	55.65	49.46*
5.	Do you borrow and lend food, money and other items?	14.40	20.00	14.70
6.	Do you have picnics with your neighbors?	32.88	35.31	30.40
7.	Do you go fishing and hunting with your neighbors?	35.77	36.31	34.76
8.	Do you play cards, horseshoes, baseball, etc.?	47.40	45.10	49.60
9.	Do you tell each other your hopes and plans for the future?	44.84	44.51	54.13**
10.	Do you repeat jokes and stories about persons in the neighborhood?	50.27	56.68	53.60

*Significant at .001 level (1953 compared to 1973 item).
**Significant at .01 level (1953 compared to 1973 item).

Test for significance based on following reference: Stephen E. Fienberg, *The Analysis of Cross-Classified Categorical Data,* 1977, The MIT Press, Cambridge, Massachusetts, Page 9.

TABLE 2. KINSHIP CONTACT

Question	(Percent of Total Respondents Answering Affirmatively) 1953 (N=380)	1963 (N=340)	1973 (N=380)
1. Do you visit relatives more than non-relatives?	53.91	49.38	58.18
2. Do most of your relatives go to the same church?	51.36	21.82	29.27*
3. Do you exchange work with relatives more than non-relatives?	20.99	16.21	31.54*
4. Do you keep close contact with relatives not living nearby?	55.07	86.67	99.72*
5. Do most of you and your wife's (husband's) relatives live in the neighborhood?	30.60	21.52	27.66
6. Has your family or your wife's (husband's) family helped in acquiring your farm through: inheritance, aid in purchase, both?	38.85	42.07	45.10
7. Do you think one of the children should take over this farm?	86.42	78.47	75.82*
8. Should children be expected to support their parents in their old age if they are able to and the parents are not able to?	83.05	57.45	46.59*

*Significant at .001 level (1953 compared to 1973 item).

The number of respondents who stated they exchanged work with relatives more than non-relatives also rose—increasing by about 11 percent. One possible explanation is that increasing technology has made farm neighbors less dependent upon each other for labor. However, in times of harvest or planting when maximum labor is needed by the entire rural community, the farmers may feel more free to call upon their relatives for labor than they do their neighbors. Further, the relatives may no longer be in the same labor pool. That is, they may have migrated to urban areas and have jobs that enable them to come back to help on weekends at harvest and planting times. Such relatives would still know and understand the specialized problems of the farm. They would also be known and trusted by those still operating farms. One other factor could be contributing to the increased exchange of work with relatives. Because of increasing costs of farm machinery, families may be pooling resources to purchase and/or exchange specialized equipment.

Changing attitudes towards inter-generational relationships became apparent in the trends. In 1973, significantly fewer parents thought the children should take over the farm than did in 1953. Passing the farm down to the next generation is perhaps becoming less economically feasible, and fewer parents may think farming is a viable occupation for their children. In addition to this change, a sharp drop occurred in percentage of people who think children should support their parents in their old age. It is possible that parents are less dependent on their children's help due to increasing reliance on government programs, such as social security.

The mean numbers of affirmative responses on all items are presented in Table 3. A surprising consistency over the 20 years is evidenced. The mean number of neighboring activities changed only from 5.4 to 5.2, while the mean number of types of kinship contacts participated in went from 3.8 to 3.9

In summary, over the entire sample, there is little change in neighborhood activities of a social nature. However, the exchange of work with neighbors has dropped precipitously. In regards to kin contacts, almost the same percentage of Wisconsin farm families are still visiting relatives more than non-relatives. Some increase has occurred in exchange of work with relatives. The percentage keeping close contact with relatives not living nearby has increased dramatically. Attitudes towards inter-generational relationships have changed. Overall, the rate of contact has remained quite constant, but there has been some change in type of contact.

TABLE 3. NEIGHBORING ACTIVITIES AND KINSHIP CONTACT

Question	(Mean Number of Affirmative Responses for All Respondents) 1953 (N=380)	1963 (N=340)	1973 (N=380)
1. Neighborhood Activity	5.4	5.2	5.2
2. Kinship Contact	3.8	3.5	3.9

TRENDS BY TYPES OF NEIGHBORHOOD

Homogeneous Versus Heterogeneous

NEIGHBORING ACTIVITIES—Trends in neighboring activities were analyzed for four groups—those respondents who lived in (1) homogeneous or (2) heterogeneous neighborhoods and the respondents who were (3) panel or (4) non-panel members. The neighboring activities were summarized by the use of an index developed from the individual items previously discussed. Possible impacts of respondent stability of residence and similarity in ethnic-religious background on neighboring activities could, thereby, be investigated.

Mean scores on the neighboring activities index are shown in Table 4. The t-test for difference between means was utilized to determine whether there were significant changes across the three intervals within a given group. The same test was used within each of the given intervals. The differences in mean scores between each of the pairs one can form among the four groups was tested for each year. Panel members, regardless of type of neighborhood, participated in more neighboring activities. In both 1953 and 1963, panel members in homogeneous neighborhoods participated significantly more than non-panel respondents in the same type of neighborhoods. By 1973, the panel in homogeneous neighborhoods dropped to approximately the same level of neighboring activities as the other three groups. Across the intervals, the drop in neighboring activities of the panel in homogeneous neighborhoods was significant between 1963 and 1973 (P=.05), and an even more significant drop was noted between 1953 and 1973 (P=.003).

Three of the neighborhoods showed remarkable consistency in their level of neighborhood activities throughout the 20-year period. Further, something other than living in the same neighborhood for 20 years appeared to be impacting the neighboring activities rate of the panel in homogeneous neighborhoods. The change in the rate of the panel's participation in homogeneous neighborhoods may have been due to changes in the character of the neighborhoods. Note that the panel in the heterogeneous neighborhoods showed little change in their neighboring activities over the 20 years. Impact of change in homogeneity is investigated later in the paper. However, homogeneity in religious-ethnic background per se, did not appear to result in high interaction rates. The non-panel respondents in homogeneous neighborhoods had approximately the same rate of interaction as did both panel and non-panel respondents in heterogeneous neighborhoods.

KINSHIP CONTACTS—Trends in kinship contacts were investigated in the same manner as neighboring activities. (See Table 5.) Once more, the panel in homogeneous neighborhoods was interacting with their kin at a somewhat higher rate than the other groups in both 1953 and 1973. The differences were not statistically significant, however. One consistent difference between the groups did appear. The non-panel respondents in the homogeneous neighborhoods interacted significantly more with their kin at all three intervals than did their counterparts in heterogeneous neighborhoods. Perhaps, panel respondents in homogeneous neighborhoods had more kin in closer proximity than the other group, although this is only speculation. It is of interest to note that the panel members, regardless of type of neighborhoods, do not necessarily have a higher interaction rate with their kin than non-panel respondents. Thus, living in the same neighborhood over a 20-year period appeared to have little impact in interaction rates with kin.

TABLE 4. NEIGHBORING ACTIVITIES INDEX

	(Mean Score by Type of Neighborhood and Group)		
	1953	**1963**	**1973**
Panel in Homogeneous Neighborhoods	6.17*## (N=55)	5.83*# (N=54)	4.98 (N=53)
Non-Panel in Homogeneous Neighborhoods	5.33 (N=133)	4.97 (N=114)	5.13 (N=135)
Panel in Heterogeneous Neighborhoods	5.51 (N=36)	5.41 (N=37)	5.38 (N=37)
Non-Panel in Heterogeneous Neighborhoods	5.09 (N=150)	5.13 (N=134)	5.20 (N=152)

Between Groups Within One Interval
*Significant at .05 level or better between panel and non-panel in homogeneous neighborhoods in 1953 and 1963.

Across Years Within One Group
#Significant at .05 level between 1963 and 1973.
##Significant at .003 level between 1953 and 1973.

TABLE 5. KINSHIP CONTACT INDEX

	(Mean Score by Type of Neighborhood and Group)		
	1953	**1963**	**1973**
Panel in Homogeneous Neighborhoods	4.17 (N=54)	3.56 (N=54)	4.13 (N=54)
Non-Panel in Homogeneous Neighborhoods	4.05**# (N=133)	3.63*## (N=114)	4.10 (N=135)
Panel in Heterogeneous Neighborhoods	3.75 (N=36)	3.73 (N=37)	3.62 (N=37)
Non-Panel in Heterogeneous Neighborhoods	3.43 (N=150)	3.22## (N=134)	3.71 (N=154)

Between Groups Within One Interval
**Significant at .001 level between non-panel in homogeneous and non-panel in heterogeneous neighborhoods.
*Significant at .05 level between non-panel in homogeneous and non-panel in heterogeneous neighborhoods.

Across Years Within One Group
##Significant at .05 level between 1963 and 1973.
#Significant at .05 level between 1953 and 1963.

When trends in kin interaction rates across the years within each group were investigated, changes appeared. Rates of interaction with kin for all four groups dropped between 1953 and 1963. The change for non-panel respondents in homogeneous neighborhoods was significant. However, non-panel members in both homogeneous and heterogeneous neighborhoods significantly reversed this trend between 1963 and 1973. During the first interval, it is possible that these groups were at the stage in their life cycle when they were establishing themselves and intergenerational contacts were particularly important. Unfortunately, this cannot be determined.

Constant Versus Changing

Neighborhoods which had retained their 80 percent homogeneity on the ethnic-religious variables were compared with those which had dropped in homogeneity over the 20 years from 80 percent to 50 percent or less homogeneity. It was found that three of the original 19 designated homogeneous neighborhoods had retained the 80 percent criteria while three had dropped to 50 percent or less. The 50 percent criteria was an arbitrary decision based on the fact that neighborhoods with 50 percent or less homogeneity had shown the greatest change on the two variables over the 20 years. The clearest contrasts then were to be gained by using these two sets of neighborhoods. By such comparisons it was hoped to determine what possible effects changes in homogeneity on ethnic-religious backgrounds might have on neighboring activities and kin contacts. Results of the analysis showed some significant differences between the constant and changing neighborhoods.

NEIGHBORING ACTIVITIES—At all three periods in time, the neighborhoods that remained constant in their homogeneity scored higher in neighboring activities than those that underwent change. The t-test for difference between means indicated no significant difference in 1953. Differences were approaching significance in 1963 (P=.06), and by 1973, the difference was significant (P=.01). There was a constant downward trend in neighboring activities in both types of neighborhoods, but these activities were dropping at a faster rate in the changing neighborhoods. There was a significant drop in the changing neighborhoods between 1953 and 1973. (See Table 6.) At none of the points did the constant and changing neighborhoods approach convergence.

One cannot conclude, however, that such differences and changes in the rates are attributed solely on the percent of homogeneity on the ethnic-religious variables. Stability of a core of residents may be a factor. There were proportionately more panel members living in the constant than in the changing neighborhoods. However, it would be unwise to generalize due to the small size of the subsamples.

KINSHIP CONTACTS—Similar patterns emerged when the rate of kinship contacts was investigated in the two sets of neighborhoods. The neighborhoods which remained constant in homogeneity over the 20 years displayed a consistently higher rate of kinship contact than did those which changed over the period. However, there were no significant differences between the two sets of neighborhoods at any point in time. Further, there were no significant changes from 1953 to 1973 within either set. (See Table 7.)

TABLE 6. CONSTANT VERSUS CHANGING NEIGHBORHOODS

	(Mean Scores on Neighboring Activities		
	1953	**1963**	**1973**
Constant Neighborhoods	6.07 (N=29)	5.70 (N=30)	5.59* (N=29)
Changing Neighborhoods	5.17# (N=30)	4.40 (N=20)	3.90 (N=30)

Between Groups Within One Interval
*Significant at .01 level.

Across Years Within One Group
#Significant at .05 level between 1953 and 1973.

TABLE 7. CONSTANT VERSUS CHANGING NEIGHBORHOODS

	(Mean Scores on Kinship Activities		
	1953	**1963**	**1973**
Constant Neighborhoods	4.55 (N=29)	3.83 (N=30)	4.52 (N=29)
Changing Neighborhoods	3.87 (N=30)	3.20 (N=20)	4.00 (N=30)

COMPARISONS OF ETHNIC AND RELIGIOUS BACKGROUNDS

Since the two sets of neighborhoods displayed differences in their rates of interaction, the two key variables in the study, ethnic background and religious affiliation, were investigated individually. All three neighborhoods which remained constant in homogeneity over the 20 years were German-Catholic. The three neighborhoods which had dropped in ethnic-religious homogeneity to 50 percent or less were of the following combinations: Norwegian-Lutheran, Polish-Catholic and Swiss-Evangelical and Reformed It is possible that other factors such as urbanization and industrialization might well have been influencing the neighborhoods in such a way that only the German-Catholic neighborhoods were relatively undisturbed in their life style. It is also possible that there was something unique about the German-Catholic heritage which facilitated the maintenance of homogeneity in those neighborhoods and encouraged a higher interaction rate with both neighbors and kin.

An in-depth investigation of possible urbanization and/or industrialization factors was beyond the scope of this section. It was possible, however, to make comparisons between various ethnic and religious groups on the neighboring and kinship indexes. Because of the small neighborhood samples, it was decided to compare all Germans and all Norwegians across the entire sample. These two nationalities were the most frequently represented in the sample, and they had also been represented in the constant versus changing neighborhood analysis.

ETHNIC BACKGROUND—Across the entire sample, those of German ethnic background participated in more neighboring activities and had more kinship contacts than the Norwegians at all three time periods. In 1953, the difference between Germans and Norwegians in rate of neighboring activities approached significance. By 1963, the difference was significant (P=.01), but by 1973, there was no significant difference. There were no significant differences within each group from 1953 to 1973, with the exception of a significant increase in the neighboring activities of Norwegians from 1963 to 1973. (See Table 8.)

TABLE 8. NEIGHBORING ACTIVITIES INDEX BY ETHNIC BACKGROUND

	(Means)		
	1953	**1963**	**1973**
German	5.64 (N=53)	5.19* (N=48)	5.60 (N=65)
Norwegian	4.77 (N=37)	4.00# (N=33)	5.32 (N=22)

Between Groups Within One Interval
*Significant at .01 level.

Across Years Within One Group
#Significant at .05 level between 1963 and 1973.

Contrasts between those of German and Norwegian backgrounds also became apparent on the kinship index. Those of German extraction interacted at a consistently higher rate and significantly so in 1963. Within each group, the interaction rate remained relatively constant with no significant differences across the years. Once more, however, the data on those of Norwegian background show a precipitous drop in kinship interaction in 1963. As noted above, there was a drop in neighboring activities at the same time by the same group. This may simply be an anomaly in the data, or there may have been some external societal force impacting on this particular group at this time. For whatever reason, the kinship rate of contact among Norwegians slightly surpassed its original 1953 level in 1973. (See Table 9.)

Religious Affiliation — In order to determine possible impact of the religious variable, comparisons, using the two indices, were made between all Catholics and all Protestants, all Catholics and all Lutherans, and German-Lutherans and German-Catholics. No significant differences were found.

TABLE 9. KINSHIP CONTACTS INDEX BY ETHNIC BACKGROUND

	(Means)		
	1953	**1963**	**1973**
German	4.42 (N=53)	4.15* (N=48)	4.28 (N=65)
Norwegian	3.83 (N=36)	3.21 (N=33)	3.86 (N=22)

Between Groups Within One Interval
*Significant at .009 level.

Overall, the data appear to indicate that German ethnic background rather than religious affiliation had an effect on interaction rates with neighbors and kin.

SUMMARY AND DISCUSSION

In summary, rates of contact with both neighbors and kin appear to have remained remarkably consistent during the past 20 years. However, changes appear to have occurred in types of contacts. Exchange of work with neighbors has decreased but relatives are called upon for assistance more frequently. Contacts with relatives not living nearby have risen dramatically. Both of these changes are possibly due to changes in technology and migration patterns of members of farm families. Such findings imply that the kin network for rural Wisconsin families has maintained its strength over the past 20 years.

Until 1973, panel members in neighborhoods homogeneous on ethnic and religious backgrounds interacted with both kin and neighbors at a consistently higher rate than the other three groups investigated. By 1973, this group's neighboring-activities rate had converged with the other groups, but it did continue to maintain kinship contacts at a somewhat higher rate. Panel members, regardless of the type of neighborhood, participated in more neighboring activities than did non-panel members.

Three neighborhoods that remained constant in homogeneity on ethnic-religious backgrounds were contrasted with three that changed in composition. Residents of constant neighborhoods consistently averaged more neighboring activities and kin contacts. However, both the constant and changing neighborhoods showed decreasing rates of neighboring activities over the years.

Kolb noted the increasing importance of social and economic functions in the rural neighborhoods. His findings appear to be partially supported by this investigation. According to the indicators of social contacts used in the neighboring index, social interaction rates in all neighborhoods remained almost constant over the 20 years for all groups investigated, except panel members in homogen-

eous neighborhoods. In contrast, the two economic indicators, exchange of labor and tools, showed a drop in neighborhood interaction. The social functions have continued to be important, and it is possible that all semblance of rural neighborhoods might have disappeared without them by 1973. Because indicators of other functions relevant to the status of rural neighborhoods were not included in the index, no overall evaluation of the changing, or perhaps unchanging, nature of these neighborhoods could be made.

Religious background appeared to have little effect on the rate of neighboring activities. Ethnic background was important. Those of German extraction were involved in more neighboring activities than those of Norwegian background. It is also of interest to note that the only neighborhoods to maintain their homogeneity over the 20 years studied were composed predominantly of German ethnic stock. These findings support Zeitlin's statement concerning the Wisconsin German's lasting sense of community. They also support the findings of Driedger who reported that Scandinavians had a lower in-group identification than Germans.

Ethnic background was also strongly related to the rate of interaction with kin. Those of German background maintained a consistently higher rate of interaction with their kin than the Norwegians. Contrary to the findings of Winch, et. al., and Kosa, et. al., affiliation with the Catholic church did not appear to be associated with closer kin ties. No significant differences on the kin index appeared between Catholics and Protestants, Catholics and Lutherans, or German-Lutherans and German-Catholics.

Farm-Practice Adoption Behavior

Researchers of farm-practice adoption behavior in the 1940s ushered in an era of inquiry resulting in a body of knowledge classic to the study of rural society. Such names as Ryan and Gross, Wilkening, Beal and Bohlen, Lionberger, Rogers and many others too numerous to mention made signal contributions to adoption-behavior research.

Out of this background came refinement in adoption research to the extent that adoption categories[20] were identified and characteristics of innovations were defined, all of which strengthened cross-cultural investigation. Rogers summed up this research focus in his book with Shoemaker in 1971. This edition to a far greater extent integrated diffusion research with the scientific study of human communication.

The focus of the farm-practice adoption part of this study was to investigate the role of cultural, social, family and neighborhood factors in the adoption of selected farm practices in Wisconsin. Relationships of ethnic and religious composition to practice adoption are also investigated.

Cultural anthropologists were the first to study acceptance of traits as a function of culture. The acceptance or non-acceptance of improved farming practices as a function of local culture is pointed out in early studies. Miner[21] analyzed the impact of technology and secular values on a traditional rural French-Canadian community. Lack of change was attributed to the long-ingrained cultural conditions. Marshall ascribed differential rates of technology acceptance to differences in value systems of cultural groups.[22] The degree of acceptance is a function of the socio-cultural complex as revealed by Wilkening.[23] Ethnicity and behavior in agricultural matters was studied by Slocum[24] when he compared German, Norwegian and Native Americans on man-land adjustment. Specific examples of religious and ethnic influence on the adoption of farming practices is seen in Kollmorgan's [25] study of old-order Amish in 1942 and Hoffer's[26] study of celery-raising practices used by Dutch descendants.

The neighborhood and its relation to farm-practice adoption was one important element of this study. Lionberger[27] revealed that neighborhoods continue to influence farm talk and information seeking among farmers despite the decline in farm numbers and the long-standing predictions of students of rural life on the demise of the neighborhood.

The work of Duncan and Kreitlow in 1953 showed heterogeneous neighborhoods were significantly higher than homogeneous neighborhoods on the adoption of an index of 25 farm practices.

The conclusion drawn in the 1953 study was: "There are factors of culture and tradition operating in homogeneous neighborhoods that limit the acceptance of improved farm practices. It appears that the strength of the family tradition, religion and primary group influence sets barriers to the acceptance of farm practices recommended by outside agencies."

Maughan[28] in the 1963 re-study of the same farm operators and the same index of farm practices, found no significant differences between homogeneous and heterogeneous neighborhoods. He concluded that both types of neighborhoods had increased in acceptance of farm practices, but homogeneous neighborhoods increased at a more rapid rate.

Homogeneous neighborhoods had further to go in farm-practice adoption. Mass, group and individual methods were enabling extension and other agricultural agencies to reach all farmers to a greater extent. Homogeneous neighborhoods were becoming less resistant to outside influences, and perhaps questions concerning adoption were handled as a group decision within the neighborhood.

ANALYSIS OF DATA

The design of this study called for an analysis of changing agricultural and educational behavior of farm residents

in two types of neighborhood groups.

The changing nature of both the sociological base, the neighborhood and the individual respondents' behavior were central factors in the study of social and technological change in this study. The change in the basic neighborhood groups, over the 20-year period, was from a strong homogeneity in ethnic and religious makeup in 1953 to a heterogeneity of these features in 1973. Evidence from the restudy in 1963 shows eight of the original 19 neighborhoods retaining homogeneity; only three remained homogeneous in 1973.

Another change in the sample to be noted is nationality of the respondents. Approximately two-thirds of the total respondents are Norwegian and German. There was a slight decrease in the percent of Norwegians in the study from 1953 to 1973, and a slight increase in percent of Germans during the same period. This reflects the stability of the German homogeneous neighborhoods, while most Norwegian neighborhoods decreased in homogeneity.

Farm-Practice Adoption Trends

Changes in adoption behavior of the entire sample were analyzed by single practices within each of the two indices, Crops and Soils, and Dairy, over the period 1953 to 1973. Comparisons were made between homogeneous and heterogeneous neighborhood residents on levels of adoption. Panel and non-panel respondents within the two cultural groups were compared. The influence of ethnic and religious homogeneity on adoption behavior was also analyzed. The neighborhoods which were 80 percent homogeneous and remained constant in their homogeneity over the 20-year period are compared with those that were originally homogeneous but dropped to 50 percent or less in their level of homogeneity by 1973. These are referred to as changing neighborhoods.

SOILS-AND CROPS-PRACTICE ADOPTION—Nine soils and crops practices recommended by Extension specialists in the University of Wisconsin College of Agriculture and by county agricultural agents throughout the 20-year period are shown in Table 10. At each interval, the level of adoption was fairly stable in percentages of respondents adopting and rank order of the practice-adoption levels, particularly in the first four ranked practices.

The highest level of adoption in 1953, 1963 and 1973 was in the use of fertilizers on corn for grain, ranging from 90.6 percent to 94.0 percent adoption. This practice, in addition to two others, soil testing and herbicide use, were adopted by more than 50% of the respondents at each of the three interviews. Soil testing increased only slightly, while herbicide use rose from 52.3 percent in 1953, to 87.4 percent in 1973.

The most dramatic changes in levels of adoption noted among all 10 practices was in (a) herbicide use, (b) side dressing of corn with nitrogen, (c) top dressing pasture, and (d) using haying equipment. From 1953-1973, increases in adoption of these four practices ranged from 17.4 percent for haying equipment to 35.7 percent for herbicide use. These increases were statistically significant.

Soil conservation, fertility maintenance and fertilizer use have long been major thrusts of county agents and specialists. Three practices that were included in the Crops and

TABLE 10. CROPS AND SOILS PRACTICES BY RANK ORDER AND PERCENT OF TOTAL RESPONDENTS USING RECOMMENDED PRACTICES

	1953 (N=380)	1963 (N=340)	Percent Change '53-'63	1973 (N=380)	Percent Change '63-'73	Percent Change '53-'73
1. Do you use fertilizer on corn for grain?	90.6	96.5	+ 5.9	94.0	- 2.5	+ 3.4
2. Have you had your soil tested for lime, phosphorus and potash during the past three years?	60.4	78.4	+18.0	61.2	-17.2	+ 0.8
3. Have you used 2-4-D or similar herbicide material on fence rows, pasture or crops during the past two years?	52.3	66.2	+13.9	87.4	+21.2	+35.1*
4. Do you have or have you hired a hay chopper, field baler, and/or barn haydryer?	39.1	30.3	- 8.8	56.5	+26.2	+17.4*
5. Do you put up grass silage?	32.0	28.9	- 3.1	37.8	+ 8.9	+ 5.8
6. Did you top-dress any old pasture last year?	28.1	28.0	- .1	47.2	+19.2	+19.1*
7. Have you renovated any old pasture during the past two years?	24.4	14.3	-10.1	19.3	+ 5.0	- 5.1
8. Are any of your fields laid off in contour strips?	21.3	30.7	+ 9.4	29.1	- 1.6	+ 7.8
9. Have you ever side dressed your corn with a nitrogen material?	10.0	30.4	+20.4	37.4	+ 7.0	+27.4*

*Significant change 1953-1973 <.005

Soils Index, (1) laying off contour strips, (2) soil tests and (3) using fertilizer on corn for grain, were important components of these efforts. These practices maintained stable levels of use, with only slight increases in adoption over the 20 years.

Adoption of pasture renovations decreased. This confirmed the findings of Wisconsin dairy researchers who reported that feeding ensiled forages to dairy cows was replacing managed-pasture grazing.

Increases in the use of herbicides and chemical fertilizers took place during a period when researchers and extension authorities were strongly recommending these materials to increase production and save labor. For much of this period, controversy emerged among certain factions over the environmental impact of herbicides and the presence of herbicide residues in food.

Between 1953-1973, the changes in the remaining five practices, as shown in Table 10, ranged from 7.8 percent down to 0.8 percent; none were significant changes. One practice, renovating old pasture, showed a change of -5.1 percent.

TRENDS IN DAIRY-PRACTICE ADOPTION—The six dairy practices shown in Table 11 were continuously recommended for adoption by College of Agriculture specialists and county agents over the 20-year period. These six practices, basic to modern dairy farming, are: (a) testing cows for production during the two years prior to the interviews, (b) testing through the Dairy Herd Improvement Association (DHIA) and high school agriculture class, (c) use of pure-bred sires or artificial breeding, (d) clipping udders of milk cows, (e) vaccinating calves for Bangs disease and (f) keeping farm records. The trends in adoption are somewhat erratic, showing both increases and decreases. However, with one exception, the same rank order of adoption was maintained for the six practices at each of the three interviews. (In 1963, vaccinating calves for Bangs disease replaced keeping farm records as the most widely used practice). All six practices were adopted by more than 50 percent of the respondents in 1953, 1963 and 1973, with the exception of testing cows for production. (See Table 11).

The two practices related to testing showed slight decreases over the 20-year period. Limiting the question to testing during the two years before the interviews introduced a degree of stringency that explains some of the 9.7 percent decrease. (Significant at P = .03). The proportion of these farmers testing through DHIA and high school agriculture classes also decreased slightly. Further explanation of these decreases may rest in the age and security of the dairy farmers in 1973. One-fourth of the farmers were in the study the full twenty years. The actual economic status of the dairy industry including the decrease in numbers of dairy farms at the 1973 interview and the lack of emphasis being placed on DHIA testing could also explain some of the decrease.

The most highly significant change was the use of artificial insemination and purebred sires, an increase of 13.8 percent (P = .005). The other practice that showed a significant increase is vaccinating calves for Bangs disease, an 11.0 percent increase (P = .005). These increases can be attributed to the strong emphasis that the College of Agriculture extension and research staff and the dairy industry placed on these practices as essential parts of programs for building foundation stock.

Increases in practice adoption of all dairy practices are more marked for the period 1953-1963 than for 1963-1973. While two practices showed significant increases in adoption between 1953-1973, all six practices showed increases between 1953-1963.

FARM-PRACTICE TRENDS BY TYPES OF NEIGHBORHOODS—Farm-practice adoption trends were analyzed for homogeneous and heterogeneous neighborhoods and by panel and non-panel groups.

Three farm practice indices, crops and soils, dairy, and

TABLE 11. DAIRY PRACTICES BY PERCENTAGE OF TOTAL RESPONDENTS USING RECOMMENDED PRACTICES AND PERCENT OF CHANGE, 1953 to 1973

QUESTION	1953	1963	Percent Change '53-'63	1973	Percent Change '53-'73
1. Did you keep farm records this year?	85.7	86.1	+ 0.4	84.2	- 1.5
2. Have you had your calves vaccinated for Bangs disease during the past year?	79.4	93.4	+14.0	90.5	+11.1**
3. Did you use purebred sire(s) or artificial insemination during the past year?	70.0	84.2	+14.2	83.8	+13.8**
4. Have you clipped the udders of your milk cows during the past year?	63.5	73.5	+10.0	69.3	+ 5.8
5. How was this testing done? DHIA, High School Agriculture?	62.8	67.9	+ 5.1	59.8	- 3.0
6. Have you tested your cows for production in the past two years?	50.8	58.7	+ 7.9	41.1	- 9.7*

*Negative significant change 1953-1973 P < .03
**Significant change 1953-1973 P < .005

general farm practices, which combines the 15 practices included in the other two indices, were developed as a basis for comparing the two types of neighborhoods over the period 1953 to 1973. Differences and similarities among ethnic-religious groups and between panel and non-panel were also investigated. Mean scores on the indices and t-test for difference between means were used in each analysis.

Mean scores on the general farm practice adoption index show a consistent pattern. (See Table 12.) Adoption levels for all four neighborhood groups increased slightly from 1953-1963. The increase was significant for the homogeneous non-panel group ($P<.002$) for this 10-year period. All neighborhood groups show a decrease in practice adoption during 1963-1973. The homogeneous panel and non-panel and the heterogeneous panel showed significant decreases during this period. Between 1953 and 1973, adoption levels for the homogeneous and heterogeneous panels decreased significantly ($P < .05$).

Consistent increases are noted in the adoption of the crops and soils index in all groups. (See Table 13.) The range of scores is from 3.37 to 4.58 for the nine practices. Comparisons between homogeneous and heterogeneous panel and non-panel groups from 1953 to 1973 show statistically significant differences in the non-panel groups.

NEIGHBORHOOD, ETHNIC AND RELIGIOUS FACTORS—Homogeneous panel and non-panel groups showed a significant increase from 1953 to 1963 in dairy-practice adoption. (See Table 14.) However, this trend reversed significantly between 1963 and 1973. Although this decreasing trend also emerged for the other two indices, dairy practices show a more abrupt rise and fall. However, heterogeneous panel and non-panel groups showed gradual but significant decreases in dairy-practice adoption for both the 1953 to 1963 period and the 1963 to 1973 period.

DAIRY PRACTICE TRENDS BY NEIGHBORHOOD TYPES—Constant and changing neighborhoods show significant increases in farm-practice adoption from 1953 to 1963 in the three indices. (See Tables 15, 16 and 17.) Significant decreases, on the other hand, are evident from 1963 to 1973 for both constant and changing neighborhoods with one exception. Farmers in constant neighborhoods increased (non-significantly) their use of crops and soils practices. Although both neighborhoods registered decreases on all three indices from 1953 to 1973, only the decrease in the use of dairy practices in changing neighborhoods was significant (P=.00). (See Table 17.)

The final part of the analysis focused on the ethnic and religious factors in relation to farm-practice adoption. Germans and Norwegians formed the largest ethnic groups in the study, constituting 65 per cent of the sample. The other ethnic and religious groups analyzed were Catholics, Lutherans, Protestants, German-Catholics and German-Lutherans.

As measured on the general farm practice index, the German group made a significant increase from 1953 to 1963, and a significant decrease from 1963 to 1973. The Norwegian group showed a slightly decreasing, but not significant, trend over the 20 years.

Catholics, Protestants and Lutherans all increased significantly in general farm-practice adoption between 1953 and 1963, and decreased significantly between 1963 and 1973. (See Table 16.) While the adoption level in 1973 was lower than 1953 level for Protestants and Lutherans, the differences were not significant. Catholics showed no change when 1973 was compared with 1953. The German-Catholic group followed the same trends for each interval, although the 1973 level of general farm-practice adoption was slightly higher than the 1953 level. Only the German-Lutheran group showed increases for each interval, although neither was significant.

Scores on the crops and soils index revealed a trend unique to farm-practice portion of the study. (See Table 17.) All seven religious and ethnic groups scored higher in the adoption of crops and soils practices in 1973 than they did in 1953. Only the Norwegian group decreased (not significant) between 1953 and 1963, and, between 1963 and 1973, the German, German-Catholic, and Catholic groups decreased slightly in their use of these practices.

In regard to dairy-practice adoption, only the Norwegian and German-Lutheran groups did not increase significantly between 1953-1963. (See Table 20.) The German-Lutheran group showed slight increases in adoption at each interval and for the entire 20-year period. The other six groups scored significant decreases between 1963 and 1973 and for the 20-year period.

TABLE 12. GENERAL FARM-PRACTICE INDEX OF ADOPTION BY TYPES OF NEIGHBORHOODS, (Mean Scores)

	1953	1963	Significant '53–'63	1973	Significant '63–'73	Significant '53–'73
Homogeneous						
Panel	6.36	7.10		5.17**	$P < .002$*	$P < .05$*
Non-Panel	6.16	7.50	$P < .002$*	6.13	$P < .006$*	
Heterogeneous						
Panel	7.14	7.30		5.83	$P < .04$*	$P < .05$*
Non-Panel	6.64	7.10		7.00		

*Significance of difference between intervals

**Significance of difference between groups P (.05 or better)

TABLE 13. CROPS AND SOILS INDEX OF ADOPTION BY TYPES OF NEIGHBORHOODS, 1953-1973 (Mean Scores)

	1953		1963			1973			
	N	Means	N	Means	Significant '53–'63	N	Means	Significant '63–'73	Significant '53–'73
Homogeneous									
Panel	55	3.38	51	3.63		46	3.44		P < .005
Non-Panel	129	3.37	93	4.04	P < .02	121	4.11		
Heterogeneous									
Panel	36	3.78	33	4.06		35	3.91		
Non-Panel	148	3.57	112	4.02	P < .04	126	4.58	P < .02	P < .000

TABLE 14. TRENDS IN DAIRY-PRACTICE ADOPTION BY TYPES OF NEIGHBORHOODS, 1953-1973 (Mean Scores)

	1953		1963			1973			
	N	Means	N	Means	Significant '53–'63	N	Means	Significant '63–'73	Significant '63–'73
Homogeneous									
Panel	55	2.98	51	3.47	P < .07	41	1.91	P < .000	P < .000
Non-Panel	126	2.86	92	3.49	P < .002	114	2.34	P < .006	P < .000
Heterogeneous									
Panel	36	3.36	33	3.24		32	2.08	P < .000	P < .002
Non-Panel	145	3.13	112	3.09		123	2.48	P < .000	P < .004

TABLE 15. GENERAL FARM-PRACTICE ADOPTION TRENDS IN "CONSTANT" AND "CHANGING" NEIGHBORHOODS (Mean Scores)

	1953	1963	Significant '53–'63	1973	Significant '63–'73	Significant '53–'73
Constant	6.76	8.86	P < .003	7.44	P < .07	N/S
Changing	6.37	8.16	P < .04	5.14	P < .000	N/S

TABLE 16. CROPS- AND SOILS-PRACTICE ADOPTION TRENDS IN "CONSTANT" AND "CHANGING" NEIGHBORHOODS (Mean Scores)

	1953	1963	Significant '53–'63	1973	Significant '63–'73	Significant '53–'73
Constant	3.72	4.78	P < .04	4.83	N/S	N/S
Changing	3.00	4.11	P < .06	3.75	N/S	N/S

TABLE 17. DAIRY-PRACTICE ADOPTION TRENDS IN "CONSTANT" AND "CHANGING" NEIGHBORHOODS (Mean Scores)

	1953	1963	Significant '53–'63	1973	Significant '63–'73	Significant '53–'73
Constant	3.03	4.04	P < .025	2.73	P < .000	N/S
Changing	3.37	4.05	P < .050	1.48	P < .000	P < .00

TABLE 18. GENERAL FARM-PRACTICE ADOPTION BY SELECT CULTURAL GROUPS (Mean Scores)

	1953	1963	Significant '53–'63	1973	Significant '63–'73	Significant '53–'73
German	6.74	8.34	P < .003	7.28	P < .06	N/S
Norwegian	6.97	6.85	N/S	5.70	N/S	N/S
Catholic	6.54	8.07	P < .001	6.54	P < .002	N/S
Lutheran	6.35	6.96	P < .05	6.29	P < .05	N/S
Protestant	6.49	7.04	P < .02	6.36	P < .015	N/S
German-Catholic	6.74	8.73	P < .001	7.33	P < .024	N/S
German-Luthran	6.22	7.18	N/S	7.60	N/S	N/S

TABLE 19. ADOPTION OF CROPS AND SOILS PRACTICES SELECT CULTURAL GROUPS (Mean Scores)

	1953	1963	Significant '53–'63	1973	Significant '63–'73	Significant '53–'73
German	3.70	4.75	P < .004	4.69	N/S	P < .007
Norwegian	3.81	3.58	N/S	3.90	N/S	N/S
Catholic	3.48	4.49	N/S	4.28	N/S	P < .013
Lutheran	3.40	3.74	P < .09	3.99	N/S	P < .005
Protestant	3.51	3.81	P < .06	4.16	P < .05	P < .000
German Catholic	3.72	4.91	P < .006	4.81	N/S	P < .01
German Lutheran	3.56	4.27	N/S	4.67	N/S	N/S

TABLE 20. DAIRY-PRACTICE ADOPTION BY SELECT CULTURAL GROUPS (Mean Scores)

	1953	1963	Significant '53–'63	1973	Significant '63–'73	Significant '53–'73
German	3.10	3.59	P < .07	2.68	P < .001	P < .09
Norwegian	3.25	3.27	N/S	1.90	P < .01	P < .002
Catholic	3.18	3.57	P < .09	2.37	P < .000	P < .000
Lutheran	2.98	3.25	P < .10	2.41	P < .001	P < .000
Protestant	3.00	3.23	P < .06	2.31	P < .000	P < .000
German Catholic	3.11	3.82	P < .02	2.59	P < .000	P < .06
German Lutheran	2.67	2.91	N/S	2.93	N/S	N/S

SUMMARY AND DISCUSSION

Several conclusions drawn from this portion of the study are applicable to the broader agricultural picture in Wisconsin. First, the level of adoption for most of the farm practices studied increased or held steady over the 20-year period, although there were fluctuations at the 10-year intervals. Many of these practices were adopted by a sizable portion of the sample, exceeding levels reported in most studies of adoption behavior. However, closer examination reveals that adoption of crops and soils practices outpaced the adoption of dairy practices. In fact, three of the six dairy practices studied showed decreases in use between 1953 and 1973.

Part of this difference in adoption may be explained by the ongoing shift away from dairy farming to cash-crops farming, which is likely to provide motivation for a high level of adoption of Crops and Soils Practices. Many dairy farmers in this study decreased dairy practice adoption between 1963 and 1973. This is most likely tied to the increasing age of the dairy farmers, since one-fourth of the sample was twenty years older at the 1973 interview. It is also likely that a dairy farmer approaching retirement will decrease his use of recommended practices. This study shows that the greatest overall decreases in dairy practices were recorded for testing cows for milk production and using DHIA or a high school agriculture class for this testing. Another explanation for these decreases may be less promotion of testing for production in the early 1970's and the depressed condition of the milk market at the time of the 1973 interview. There is some evidence to support both of these suggestions in the early 1970s.

A second general conclusion that warrants discussion is the trends of adoption for each of the four neighborhood groups studied. One bit of evidence that stands out is the tendency for homogeneous and heterogeneous groups and panel and non-panel to show steady to sharp increases in adoption in the 1953 to 1963 period, and gradual to sharp drops in adoption during the 1963 to 1973 period. This pattern is more characteristic of the homogeneous panel. Panel members were twenty years older than when the study was initiated, and their interest in keeping up with the latest recommendations and extension activities may have been slackening.

In contrast to the panel members, non-panel respondents were replacements on farmsteads included in the 1953 interview. These were likely younger and more progressive farmers, some of whom received the farm through family transfer. These farm families, as reflected in the data, showed more consistent increases in adoption, less abrupt decreases, and showed higher levels of adoption from 1963 to 1973. Non-panel respondents living in heterogeneous neighborhoods showed the highest level of adoption in 1973.

Educational Behavior in Rural Wisconsin

What is the role of the schools in a changing rural society? This question reveals two conflicting views that have been at the center of educational thought among both educators and citizens throughout the history of Wisconsin. One view holds that the purpose of the school is to introduce and foster change—even to the extent of serving as agents of reconstruction.[29] Johnson, et al,[30] state that "it is not uncommon for the school to be looked to as the potential agent for curing the ills of society." The other view, a traditional one, is that schools serve as formal agents for the transmission of culture. As Johnson, et al,[31] further state, "The U.S. has developed and supported a formal institution for providing the education necessary for cultural preservation."

Wisconsin rural schools in many ways reflected some elements of both of these views during the period 1953 to 1973. Citizens and educators on the one hand supported a legislative and decision-making process to overhaul drastically the rural school system. On the other hand there was strong agitation during the 1950s to retain the local one-room school system as the "last bastion" of local citizen control of education.

The purpose of this facet of the longitudinal study was to determine the changing views and behavior of selected farm residents toward rural school programs and practices, and to determine the impact of cultural features of society on educational attitudes.

This 20-year period at times approached revolutionary proportions in a changing rural education. The changing scene in rural schools was highlighted by rapid developments in school organization, transportation of pupils, teacher training, effects of legislation and literally an explosion in educational opportunity in rural schools. Some examples of these trends are (a) a reorganized district structure from over 5,000 one-and two-room school districts to approximately 350 K-12 comprehensive community school districts. The former three-person local school district board is now a large K-12 district school board of five to nine members. The comprehensive community school district is administered by a Superintendent of Schools selected on professional qualifications and employed by the district school board.

To place the impact of cultural features in a society on the shaping of educational attitudes in the perspective of this study, one needs to look at some of the relevant research in this area. We know that features of the rural culture, such as nationality, religion, neighborhood and family, were at the center of research emphasis of educators

and sociologists during the '40s and '50s. A review of attitudes toward rural education previous to the initiation of of this longitudinal study reveals that among nationalities,[32] the most positive views were held by old Americans and Scandinavians (Danes and Norwegians) followed by Germans, with Polish and Bohemian most resistant and changing least from first to second generation. These findings were confirmed by Pedersen[33] in a comparison of Danish and Polish in Wisconsin. He noted that the Danish group exceed the Polish in degree of acceptance on every educational trait measured.

Dehart[34] further concluded that the homogeneous populations are least receptive to education, while in most heterogeneous groups cultural change proceeds most rapidly. The factors most closely associated with attitude toward rural secondary education were nationality, religion, socio-economic status and population mobility. The findings from the 1953 phase of this longitudinal study show that citizens living in heterogeneous neighborhoods were consistently more favorable toward a majority of school practices. Differences were greatest among heterogeneous neighborhoods on educational goals, aspirations and educational attainment. Germans and Polish-Catholics, German-Lutherans and Norwegian-Lutherans were most resistant to school practices in homogeneous neighborhoods, with Swedish-Lutherans, Danish-Lutherans and Swiss-Evangelicals least resistant.

Analysis of data in this chapter is focused on the changing educational attitudes and behaviors of 380 heads of farm households. The variables analyzed were developed from the following school program categories:

1) Elementary School Program
2) School Organization and Reorganization
3) Pupil Transportation
4) School Lunch Program
5) The High School Program
6) Teacher Training
7) Parents Organizations

Approximately 30 questions were prepared for these seven categories. These questions were designed to elicit responses of belief and action which would reveal the attitudes and their changing nature during the period of 1953-1973. The results of this analysis are described by comparing groups of respondents from interviews in 1953, 1963 and 1973. The comparisons used are dichotomized by type of neighborhood, homogeneous or heterogeneous; by nationality, Norwegian or German; by number of times involved in the study, panel or non-panel; and by religious affiliation, Catholic or Protestant.

The school variables analyzed below are classified according to the level of changes in behavior and/or attitude taking place over the 20-year period. The categories are: (1) school variables showing an increasing level of acceptance from 1953 to 1973, (2) school variables showing no change in acceptance, and (3) school variables showing erratic change in acceptance.

1. Increasing level of acceptance.
   a. Number of grades each teacher can best handle with 25 pupils.
   b. Physical education facilities and staff available.
      —Playground equipment.
      —Gymnastic facilities.
      —Physical education supervisor.
   c. Plan for reorganizing schools was publicized sufficiently.
   d. Kind of school organization desirable.
   e. Distance children should walk on their way to school.
   f. Transportation of children at district expense.
   g. Kind of school lunch children should have.
   h. Education necessary for boys to be farmers and girls to be farmers' wives.
   i. Sixteen-year-old compulsory attendance law.
   j. Teacher training necessary for elementary and secondary teachers.
2. No change in acceptance.
   a. Importance of art, music and recreation.
   b. Necessity of modern conveniences in the school.
   c. Effect of school reorganization on taxes.
3. Erratic change in acceptance.
   a. Provision of health services in the school.
   b. Parents helping teachers to plan what is taught.
   c. Satisfaction with the way schools are operating in the district.

INCREASING LEVEL OF ACCEPTANCE

Number of Grades

The elementary teacher in rural Wisconsin public schools at the initiation of this study in 1953, was teaching four to eight grades with 15 to 30 pupils. These were one-room rural and two-to three-room state grade schools. Four parochial schools of one to four rooms for the eight grades located in Catholic parishes were included in the study. The number of grades respondents believed a teacher should handle with 25 pupils changed significantly from 1953 to 1973. The majority of the respondents in 1953 believed that a teacher should handle four to eight grades. In 1973, 77 percent of the respondents believed one teacher should teach one or two grades. However, approximately 10 percent still thought that one teacher should handle eight grades.

This change in attitude toward the number of grades per teacher are fairly consistent among all eight cultural and neighborhood groups and panel and non-panel respondents in the study.

Physical Education Facilities and Staff Available

The respondents of this study rather strongly supported the provision of physical education facilities and staff. The rural school playground and its equipment is an important

part of the educational program as attested to by the respondents. Almost all of the respondents, at all three interviews, answered "yes" when asked if playground equipment, such as swings, slides, baseball, softball, etc., should be available. There was little or no difference among cultural groups compared.

The percent of respondents favoring gymnasium facilities in schools increased significantly between 1953 and 1973. For the eight groups studied, increases in support for the facilities ranged from 15 percent to 39 percent.

An integral part of the physical-education program of the rural school during this period was the availability of a physical education supervisor (teacher). The desire to provide a staff person in this area, increased significantly, with increases in favorable responses between 1953 to 1973 ranging from 12 percent to 33 percent among all groups.

Publicizing the Plan for Reorganizing Schools

School-reorganization legislation, local-citizen involvement and school-district reorganization referenda were critical highlights of educational change in Wisconsin during the period of this study. Legislation at one point in the early 1960s decreed that all citizens in Wisconsin were to be in a K-12 school district by a given date. This was to be accomplished through local referenda with a high level of citizen involvement. All areas were to develop a plan for reorganizing the rural school. One critical part of this plan was to publicize it adequately so that the public would be kept informed and involved in the progress of school reorganization in each district. Significantly more positive attitudes were noted toward the "sufficiency of publicity on the reorganization plan." In 1953, from 28 percent to 52 percent of the respondents in all groups thought the publicity was sufficient. By 1973, positive responses increased to more than 80 percent. Some differences in a positively changing attitude were noted, the greatest of these being German over Norwegian, and Catholic over Protestant. The completeness and orderly manner in which school reorganization proceeded in Wisconsin can partly be attested to by the results of these data. A potentially explosive educational issue was transformed into an orderly social change during the '50s and '60s.

Kind of School Organization

The kind of school organization desirable to rural citizens was perhaps the most controversial educational question faced by Wisconsin citizens during the past 30 years. Much of this controversy raged within rural school districts during the time this study was being conducted. The local groups in this study provided an ideal laboratory to assess attitudes of rural citizens toward this question. Even in 1953, when the first interview was conducted, there was a wide variation in thinking about the form of the rural school district. The data reveals that the kind of school-district organization considered desirable at that time was quite evenly distributed among (a) one-room school districts, (b) two or more one-room schools put together, and (c) a reorganized district with elementary children left in the rural schools. The latter plan (c) was emerging in 1953 as the most desirable. By 1973, support among respondents in this study had settled on two plans. The one previously mentioned, "a reorganized district with elementary children left in the rural schools," dominated the responses in all groups compared. A second plan, with slightly less preference, was "a reorganized district with all children transported to a central school." These two plans combined were acceptable to approximately 80 percent of the respondents. Support for the combined plan was lower among the ethnic Norwegian and ethnic German groups. Sixty-six percent of the German group and 55 percent of the Norwegian group preferred these two plans. Fifteen percent of the ethnic Norwegians and 10 percent of the ethnic Germans still felt in 1973 that the one-room school was the most desirable.

Transportation to School

Walking to school in the one-room rural school district has traditionally been the practice followed. As school districts became larger and as school reorganization proceeded, transporting by bus became more prevalent. Early in the period of this study, if a family lived within 1.5 miles of the school, it was a normal expectation for children to walk. Progress in school reorganization and the provision of other modern services in the school district were followed by changing expectations as noted in the data on the question: "How far do you think elementary school children should be expected to walk on their way to school?" The 1953 data revealed in all comparisons that the expectation on the average was over one mile, with a maximum of two miles. By 1973, this expected distance was reduced by one-half. In most group comparisons, the respondents expected children to walk one-half to two-thirds of a mile. The reduction in this expectation is no doubt influenced by the fact that the reorganized school district had by this time assumed the responsibility for transporting all children within a predetermined distance.

The following question also focused on transportation to school: "Should children living beyond the distance given by the respondent be transported at district's expense?" In 1953, for all group comparisons, approximately 75 percent answered "yes." But in 1973, this positive answer had risen to 90 percent of the respondents. The largest difference between increases in support for district financing of transportation was recorded by the Catholic group over the Protestant groups. No differences existed between any of the other comparisons.

School Lunch

A wide variety of arrangements for lunch in the rural school of 25 to 30 years ago was evident. This ranges from

a home-prepared bag or box lunch to a full meal prepared by teachers and children. It was impossible to develop and maintain any kind of uniformity and completeness in school lunch service. Even in light of this variation, the respondents of this study held strongly to the principle of providing a "complete lunch" throughout the 20 years. In 1953, comparisons of all groups revealed that 57 percent to 68 percent of the respondents believed that a complete lunch should be provided. This was also the finding in 1973. The "complete lunch" coupled with the second answer, "a hot dish to supplement lunch brought from home," comprised the majority of the answers in 1953.

There was a slight change in the responses in 1973. The "complete lunch" response held consistent in all comparisons in 1973. The second most numerous response was "a cafeteria where children can choose the food for their noon meal." These two answers in 1973 made up approximately 80 percent of the responses. The school cafeteria had by this time become a standard service provided by the reorganized school district and influenced the answers of respondents in this study. Two points stand out in the analysis of this question: "The respondents (1) held firm over the 20 years to principles of good nutrition through the "complete meal" concept, and (2) made adaptations in their attitudes toward the environment, i.e., providing lunch in the rural school and supporting the cafeteria in the reorganized school.

Education Necessary for Boys to be Farmers and Girls to be Farmers' Wives

Educational aspirations of parents for their children increased between 1953 and 1973. Parents generally want more educational opportunities for their children than they had. The amount of education considered necessary "for sons to become farmers" increased with each 10-year period. A range of from 50 percent to 57 percent of each group in 1953 believed that "a high school education was necessary for boys to be farmers." This was followed in importance by the response "high school plus vocational school" in most comparisons. In 1953, five of the eight groups analyzed ranged from 16 percent to 22 percent believing "high school plus vocational school was necessary for boys to be farmers" in 1953. The remaining three groups, Norwegian, German and Catholic, ranged from 8 percent to 10 percent in this response.

In 1973, fewer respondents said a completion of high school was necessary for a farming career. This range was from 45 percent to 48 percent for most groups. However, the percent of respondents who felt "high school plus vocational school" was necessary increased slightly. For all groups except the German one, the largest percentage felt high school plus vocational school was the "most important level necessary" in 1973. Forty-five percent of the German group said a high school education was "necessary." Between 1953 and 1973, the proportion of the Norwegian group that felt "high school plus vocational school" was necessary, increased from 8 percent to 55 percent. Increases from 1953 to 1973 in all other groups ranged from 21 percent to 31 percent on this response.

There was an increase in percentage of respondents from 1953-1973 believing it was necessary for boys to have "some college" or "finish college" to be farmers. Increases from 10 percent to 25 percent within groups were evident, but none were significant.

In 1953, 10 percent more respondents believed that girls should have a high school education than believed boys should have a high school education. Over 75 percent of the 1973 respondents, however, believed "finishing high school" and "finishing high school plus vocational school" was necessary for girls to be farmers wives. This finding was similar for both boys and girls.

Attendance Law for 16-Year-Olds

School-age children, particularly boys, have historically been a major source of labor on the family farm in Wisconsin. In fact, one dominant feature of school attendance prior to 1950 was the school dropout of farm boys at approximately 14 years of age. Very few farm boys continued their schooling beyond the eighth grade before Wisconsin law made school attendance mandatory until 16 years of age. With the passage of this law in 1950, the pattern of school attendance changed drastically among rural boys—a change that faced little opposition. By the time this investigation was initiated in 1953, mandatory attendance until age 16 was well-accepted by the groups compared in this study. The respondents of this study were asked how they felt toward this law by indicating (a) approval, (b) disapproval, or (c) it should be more than sixteen years.

The prevailing attitude in 1953 was approval of this law. All groups, except German and Catholic, expressed 77 to 95 percent approval. Support among German and Catholic groups was even more substantial with 61 percent and 65 percent, respectively, indicating approval, and an additional 16 percent and 14 percent, respectively, expressing approval of "more than sixteen years of age."

There were some sharp differences between groups on this law in 1953. Ninety-two percent of the respondents in heterogeneous neighborhoods favored the law, as compared with 77 percent in homogeneous neighborhoods.

The increase in favor of the law by 1973 was apparent. The highlight of these data by 1973 was approval of "more than sixteen years of age" as being compulsory.

While most groups in 1953 favored the 16-year compulsory attendance law, from 4 percent to 5 percent of the same groups believed it should be "more than 16 years." By 1973 all groups except two had increased by approximately 25 percent in their belief that compulsory attendance law should be "more than 16 years." The German and Catholic groups held steady in their approval of the "sixteen-year school-attendance law."

Teacher Training Necessary for Elementary and Secondary Teachers

Wisconsin rural school districts established a strong tradition of permitting teachers to be certified to teach after two years of County Teachers College training. At the same time, secondary teachers were generally required to complete a Bachelor's degree. The above conditions were prevalent prior to the rural school-reorganization movement in the '50s and '60s.

For each of the groups examined, one-fourth of the respondents in 1953 believed that an elementary teacher should have a four-year degree. The majority of the respondents in the groups, 50 percent to 75 percent, however, adhered to the traditional view that the elementary teacher should have two years of college. However, more Norwegians than Germans, and more Protestants than Catholics believed two years of college was sufficient for the elementary teachers.

In 1973, three-fourths of the respondents believed that four years of college was needed by an elementary teacher. This was a dramatic change in attitude—about 50 percent over the twenty-year period. Less than 10 percent of the respondents in 1973 still felt that two years of college was sufficient for an elementary teacher.

Attitudes toward training for the secondary teacher have some very strange patterns in the data from 1953 to 1973. For example, slightly more respondents from homogeneous groups than from heterogeneous groups believed a secondary teacher should have a four-year degree, 44 percent to 32 percent respectively. Heterogeneous groups, on the other hand, believed a secondary teacher should have more than a four-year degree, 57 percent to 33 percent respectively. By 1973, these data had stabilized for both homogeneous and heterogeneous groups. A four-year degree was the accepted level for secondary teachers; two-thirds of both groups supported this level.

When panel members were compared with non-panel respondents in 1953, approximately one-half of each group believed a secondary teacher should have "more than a four-year degree," while over one-third believed a four-year degree was adequate. On the other hand, more Germans and Norwegians believed secondary teachers should have "a four-year degree" than believed they should have "more than a four-year degree." In all comparisons in 1973, respondents who felt that secondary teachers should have "more than a four-year degree" outnumbered those who thought "a four-year degree" was sufficient by two to one.

NO CHANGE IN LEVEL OF ACCEPTANCE

Three variables, (a) the importance of art, music and recreation, (b) the necessity of modern conveniences in the school and (c) the influence of school reorganization on school taxes, were examined in this portion of the study. Essentially no change took place in the schools, in regard to these three areas, and even at the outset of the study, respondents showed strong support for art, music and recreation programs and modern conveniences in the schools. This support did not waiver over the period.

The third variable remaining relatively stable throughout the 20-year period was "the influence of school reorganization on school taxes." In the period before large-scale rural school reorganization, the respondents of this study believed that school reorganization would cause taxes to increase. This held true in their perception, both in 1953 and 1973. The respondent groups, when compared, were quite equal in their beliefs, with 75 percent to 87 percent of the respondents in each group holding this view.

ERRATIC CHANGE IN LEVELS OF ACCEPTANCE

Three unrelated variables, (a) provision of health services in the schools, (b) parents helping teachers plan what is taught, and (c) satisfaction with the way schools are operating after reorganization, showed erratic trends during the period 1953 to 1973. While there were no significant changes, there were slight increases and slight decreases from one cultural group to the other.

The provision of health services in the schools was supported by from 58 percent to 71 percent of all groups in 1953. The 1973 data reveals both increases and decreases from 1953. For example, Norwegians increased from 58 percent to 64 percent in support of health services in the schools, while Germans decreased from 62 percent to 50 percent. This erratic behavior in this one variable is no doubt related to the extent to which families were committed to health insurance coverage, as well as the availability of more health services to the family.

The traditional one-room school in rural Wisconsin was always considered close to the family and a center for many activities involving the neighborhood. Parents' contributions were considered important to the educational welfare of the children. Approximately 40 percent of all respondents in 1953 believed that parents should help plan what is taught. There was little difference between compared groups at this initial interview, except for comparison of the Norwegian and German groups. In 1953, 45 percent of the German respondents in contrast with 31 percent of the Norwegian respondents believed that parents should help the teacher plan. The most dramatic increase from 1953 to 1973 was made by the Norwegian group, increasing to 48 percent. The German group held constant at 45 percent in 1973.

SUMMARY AND DISCUSSION

Education in the rural schools during the period of this investigation, 1953 to 1973, was highlighted by the most dramatic changes in its more than 100-year history. These changes were characterized by shifts from small rural school districts to reorganized and centralized community schools, emphasis on higher level of teacher training, trans-

porting pupils long distances and provision of specialized pupil services.

Technological change in rural society, as reflected in agriculture and agri-business, is also evident in rural education, as well as attitudes toward rural schools. Among the changes in attitude are increasing acceptance of centralized school organization, the belief that one teacher should teach a smaller number of grades and the expectation that the school district would provide pupil transportation.

The orderly manner in which school reorganization proceeded in the '60s can, in large part, be attributed to the close-working relationship of school officials and citizens, i.e., the well-organized involvement of citizens in school-reorganization referenda.

Evidence in this study seems to support the impact of legislation on educational attitudes. By the early '50s, almost complete acceptance of compulsory attendance laws had taken place. Likewise, legislation in the '60s gave impetus to the school-reorganization movement.

Educational aspirations of parents for their children increase with each generation. Parents want more educational opportunities for their children than they were able to obtain. This is supported by the increasing amount of education believed necessary for boys to be farmers and girls to be farmers' wives.

Participation in Voluntary Organizations

This section focuses on trends in participation in voluntary organizations. It deals with the possible impact of three variables in participation—ethnicity, religious preference and longevity in the neighborhood.

Several variables that tend to be related to participation in rural areas are identified in the literature. These variables include income,[35, 36, 37] education,[38] age,[39, 40] farm size[41] and family-participation traits.[42, 43] In 1962, Warner[44] investigated some characteristics of voluntary organizations in Iowa County, Wisconsin, an area which is predominantly rural. He found that less than 60 percent of organization members attended meetings, that the majority of members took part by "just listening," and that offices are generally concentrated in the hands of a small proportion of members. Despite this past work, there appears to be little current concentration on voluntary organizations in rural areas.

No direct causality can be established in this investigation; yet the generally known changes in farming operations, e.g., higher levels of technology, changes in communication and transportation, and other modernizing factors, are the basis for the following general hypothesis. It is hypothesized that overall participation in voluntary organizations would have decreased between 1953 to 1973 among a sample of farm families. Certain variables, such as longevity in a neighborhood, ethnic background, and religious preferences might have impact on participation. It is therefore further hypothesized that: (a) people who have operated farms in the same neighborhood for 20 years would participate in more organizations than those who started farming in the neighborhood during the 20 years, (b) there would be different participation rates for those of different ethnic backgrounds, and (c) there would be different participation rates for those of different religious preference.

OVERALL TRENDS IN PARTICIPATION

A larger percentage of farm households belonged to a religious organization than to any other organization at all three intervals. (See Table 21.) Consistently, approximately 70 percent of respondents who belonged rated the religious organization as one of "much" value to them on a scale which ranged from "little" to "some" to "much." Memberships in cooperatives had the next highest percentage, but in this instance, there was a slight but consistent downward trend in those who placed "much" value on these organizations. (See Table 21 for the list of organizations investigated.)

Both Extension Homemakers Clubs and Extension 4-H Clubs showed increases in membership between 1953 and 1963, and almost no change from 1963 to 1973. However, Homemakers Clubs were valued considerably less in 1973 than in 1963. This may be partially due to the changing role of women, but no data is available on this. In contrast, membership in 4-H was valued higher in 1973 than in 1963.

Membership in Parents'-Teachers' Association (PTA) showed a persistent, although slight, downward trend and relatively little change in value. Three types of organizations were characterized by lack of membership. These are ethnic organizations, social clubs and political organizations. No memberships in political organizations were cited at all three time periods, while small percentages of memberships in ethnic and social clubs were noted in 1953. By 1963, these memberships had evidently ceased.

Overall participation as measured by memberships in organizations per household appears to have remained relatively stable and even shows a slight increase over the 20 years. Mean number of memberships per household in 1953 was 2.26; it increased slightly to 2.41 in 1963, and was 2.43 in 1973. (See Table 22.) Memberships in the specific groups of farm and educational organizations showed slightly different patterns. Farm organization memberships dropped slightly from 1953 to 1973, while educational organizations showed some increase. There was a significant increase in this type of membership from 1953 to 1963.

In summary, religious organizations continue to be important in the rural areas. Although cooperatives showed a consistent downward trend in value, the farm households are still maintaining membership in these organizations

TABLE 21. PERCENT OF HOUSEHOLDS HOLDING MEMBERSHIP IN VOLUNTARY ORGANIZATIONS

	1953 N=380		1963 N=340		1973 N=380	
Organization	% Holding Membership	% of Members Placing "Much" Value on Organization	% Holding Membership	% of Members Placing "Much" Value on Organization	% Holding Membership	% of Members Placing "Much" Value on Organization
Homemakers	13	56	21	60	21	46
4-H Club	14	75	33	60	30	72
Conservation Watershed District	6	36	4	23	5	47
Farm Bureau	16	32	9	35	9	22
Farmers Union	6	35	8	31	10	21
National Farmers Organization	0	0	15	38	6	33
Breeders' Association	19	48	17	61	18	45
Cooperatives	36	64	40	50	38	47
School Boards	11	21	10	71	9	62
Town Boards	4	19	6	71	8	30
P.T.A.	28	55	19	61	18	54
Religious Organizations	45	69	48	66	60	77
Ethnic Organizations	1	50	0	0	0	0
Social Clubs	6	78	0	0	0	0
Other Clubs	5	56	4	75	3	100
Political Organizations	0	0	0	0	0	0

TABLE 22. MEAN NUMBER OF MEMBERSHIPS IN VOLUNTARY ORGANIZATIONS PER HOUSEHOLD

	1953 N=380	1963 N=340	1973 N=380
Total Organizations	2.26	2.41	2.43
Farm Organizations	.87	.91	.81
Education Organizations	.69*	.84	.79

*Significant at .05 level or better between 1953 and 1963.

which are primarily geared to business and marketing. In contrast, the PTA has dropped in membership but retained approximately the same value rating.

The rural households in this sample showed little interest in ethnic or social clubs and a total lack of affiliation with political organizations. Overall, mean number of memberships in organizations per household appears to have remained almost constant between 1953 and 1973.

PANEL VERSUS NON-PANEL

Trends for panel members versus non-panel respondents were investigated in an effort to determine whether length of residence in a given neighborhood would have impact on organizational participation. In general, panel households did appear to have memberships in more organizations than non-panel households. (See Table 23.) However, there were few statistically significant differences. Only in 1953 did the panel households participate in significantly more organizations than the non-panel households.

Both panel and non-panel households participated in more farm than educational organizations at all points in time. Further, there was no significant drop in membership by either group across the time intervals. In fact, a significant increase in participation in educational organizations occurred between 1953 and 1963 in non-panel households. Panel households did show a slight drop in farm organization participation across the years, but the same groups also showed a slight increase in educational organization members.

In summary, length of residence in a given neighborhood appeared to have little significant impact on organizational participation.

TABLE 23. MEAN NUMBER OF ORGANIZATIONS PARTICIPATED IN BY PANEL VERSUS NON-PANEL HOUSEHOLDS

	1953		1963		1973	
	Panel (N=91)	Non-Panel (N=289)	Panel (N=91)	Non-Panel (N=249)	Panel (N=91)	Non-Panel (N=289)
Total Organizations	2.64*	2.13	2.40	2.42	2.71	2.34
Farm Organizations	1.02	.83	.93	.91	.89	.78
Educational Organizations	.80	.65#	.80	.85	.89	.75

Between Groups Within One Interval
*Significant at .05 level or better between panel and non-panel households in 1953.

Across Years Within One Group
#Significant at .01 level between 1953 and 1963.

CATHOLIC VERSUS PROTESTANT

Catholic households held fewer memberships in total organizations than did the Protestant households over the entire period. (See Table 24.) The difference became statistically significant in 1973. Protestant households showed a persistent upward trend in total memberships. In contrast, Catholic households showed an increase between 1953 and 1963, but a rather decided drop in 1973.

When participation in farm organizations was analyzed, Catholic households held more memberships than Protestant households through 1963, but in 1973, Catholic membership had dropped so much that the Protestant households showed significantly more memberships in farm organizations.

An almost reversed pattern became evident when membership in educational organizations was investigated. Protestant households held persistently more memberships in these. Further, the differences were statistically significant at all three points in time. Part of this difference may possibly be attributed to the Catholics' involvement in a separate educational system. This system perhaps offers a slightly different set of educational memberships not specified in the survey instrument. If this is the case, it would also help to explain the differences in total organizational participation.

In summary, Catholic households held fewer total memberships across the 20 years. This trend was especially true of membership in educational organizations, but by 1973, Catholics held significantly fewer memberships in both farm and educational organizations.

TABLE 24. MEAN NUMBER OF ORGANIZATIONS PARTICIPATED IN BY CATHOLIC VERSUS PROTESTANT HOUSEHOLDS

	1953		1963		1973	
	Catholic (N=80)	Protestant (N=284+)	Catholic (N=71)	Protestant (N=267+)	Catholic (N=98)	Protestant (N=270+)
Total Organizations	1.98	2.38	2.30	2.44	2.01*	2.67
Farm Organizations	.93##	.88	1.07###	.87	.63*	.90
Educational Organizations	.51*	.75#	.53**	.92	.60*	.88

+Note: A few households claimed no religious preference and were not included in this analysis.

Between Groups Within One Interval
*Significant at .05 level or better between Catholic & Protestant households.
**Significant at .001 level.

Across Years Within One Group
#Significant at .05 level or better in Protestant households between 1953 & 1963.
##Significant at .05 level or better in Catholic households between 1953 & 1973.
###Significant at .001 level in Catholic households between 1963 & 1973.

TRENDS BY NORWEGIAN VERSUS GERMAN ETHNICITY

Households of Norwegian ethnic background consistently held more memberships in voluntary organizations than did households of German ethnic background. Although the difference was statistically significant only in 1953, nevertheless, the differences continued across the entire twenty years. (See Table 25.)

When membership in farm organizations was analyzed, the German households showed somewhat more support than the Norwegian households until 1973. By 1973, the Norwegians held more farm organization memberships than the Germans. There was a significant drop from 1963 to 1973 farm organization membership in German households.

Just the opposite pattern appeared in educational organization memberships. Norwegian households held significantly more memberships in 1953 and 1963 than German households. By 1973, the German households held slightly more memberships in educational organizations, although the difference was not statistically significant.

In summary, ethnic background appeared to have some impact on membership in voluntary organizations. Those of Norwegian ethnicity held more memberships than those of German background. The Norwegian average was also more than the overall sample average. The Norwegians held significantly more memberships in educational organizations than the Germans until 1973, when the pattern showed a slight reversal. In contrast, the German households held more farm organization memberships until 1973, but the differences between the ethnic backgrounds were never significant across the 20 years.

DISCUSSION AND SUMMARY

The general hypothesis that overall participation in voluntary organizations would decrease between 1953 to 1973 in a sample of farm families was not supported. In fact, there was a slight increase. This trend may be evidence of continued strong social bonds in rural areas; however, further investigation is needed to establish this point. It should be noted that approximately half the organizations investigated are directly related to the business of farming. Their purpose is not primarily social, although some social bonds may be developed and/or maintained through business organizations.

Although the overall trends in relation to longevity in a neighborhood were in the direction hypothesized, this factor appears to have little significant impact on participation in voluntary organizations. Participation appears to be about as likely for a "newcomer" to an area as it is for the long-established resident. This finding may be partially confounded by the fact that, in a limited number of instances, the sons of panel members took over the farms during the 20 years. Thus, although they would not appear in the panel, they would still be long-time residents of the area.

Religious preference did appear to have significant impact on farm-family participation in voluntary organizations. Those belonging to the Catholic church may be involved in a separate educational system, and thus participate less in the educational organizations investigated. However, this factor would not contribute to the significant drop in farm-organization participation by Catholics from 1963 to 1973. When the overall trends for individual organizations are checked, it becomes apparent that the National Farmers' Organization suffered the largest drop in membership between 1963 and 1973. Perhaps some of the positions taken by this organization were not in accordance with the ideology of the Catholic church.

TABLE 25. MEAN NUMBER OF ORGANIZATIONS PARTICIPATED IN BY HOUSEHOLDS OF NORWEGIAN VERSUS GERMAN ETHNICITY

	1953		1963		1973	
	Norwegian (N=37)	German (N=53)	Norwegian (N=33)	German (N=48)	Norwegian (N=22)	German (N=65)
Total Organizations	2.95*	2.13	2.76	2.50	2.64	2.40
Farm Organizations	1.00	1.01	.88	1.25#	1.18	.83
Educational Organizations	1.03**	.43	1.00*	.47	.59	.66

Between Groups Within One Interval

*Significant at .05 level or better between Norwegian and German households in 1953 and 1963.

**Significant at .001 level.

Across Years Within One Group

#Significant at .05 level between 1963 and 1973 for German households.

Implications for Social Change

Social trends seldom change their direction quickly or sharply even though technological change is occurring with great rapidity, according to Ogburn.[45] Such unequal rates of change are documented by the data in this study. Continued stability in social interactions in rural neighborhoods is evidenced by the data on contacts with kin and neighbors, and participation in voluntary organizations. In contrast, marked changes were noted in acceptance of farm practices and attitudes towards rural education.

The level of social activities in the neighborhoods showed only slight changes. And, the dramatic change in the percent of respondents who kept close contact with relatives not living nearby might indicate that communications and transportation technology have allowed families to maintain social contacts regardless of otherwise changing conditions.

Data in this study suggest that both ethnicity and homogeneity in the neighborhood are important to the level of social interaction and acceptance of technology. Ethnicity according to the Social Science Research Council[46] (1)involves a past-oriented group identification emphasizing origins, (2) includes some conception of cultural and social distinctiveness and (3) relates to a component unit in a broader system of social relations.

This definition implies that values and traditions would tend to be continued in homogeneous neighborhoods that have a strong ethnic base. Homogeneous neighborhoods with their tightly knit local social systems might therefore resist change in broad social trends longer than heterogeneous neighborhoods. A German ethnic neighborhood with a strong farming tradition, for example, might resist selling land for development longer than a heterogeneous neighborhood. It might at the same time accept any technology or education which would be viewed as helpful to continued farming or agricultural development.

Significant differences were found when ethnic background was investigated. Those of Norwegian heritage consistently belonged to more organizations than did those of German background. The differences between the two groups were most apparent in the Norwegians' support of educational organizations in 1953 and 1963. Because of the patterns of settlement on the land in Wisconsin, it is possible that the Norwegians felt a greater need for formal education than did the Germans. It is known that the Germans settled on some of the most fertile land in the state, and further, that they have retained many of these landholdings through the years.

The stability of neighborhood and family contacts over the study period suggests that primary social relationships in rural areas have not been greatly influenced by technology and outside institutions. The lack of dramatic change in social relationships over the 20-year period supports the contention that the importance of these contacts is likely to persist in a gradually changing farm structure, characterized by fewer family farms, increasing farm size and more corporate farms. In light of these ongoing changes, neighborhood and family relationships merit further study. In addition, the development of farmland for non-agricultural purposes is also influencing the rural neighborhood and suggests the need to investigate the impact of this development on social relationships.

The changing nature of agricultural technology is taking two complementary directions for the future. There was evidence in the first 10 years that farm-practice adoption was positively related to the heterogeneity of the neighborhood. However, as the number of homogeneous neighborhoods decreased and with the easier access to agricultural technology, adoption levels equalized among the neighborhoods in this study.

Shifts in agricultural technology during the 20-year period showed dramatic decreases in the number of dairy farms and dairy cows. The Wisconsin dairy industry is now a more stable, highly mechanized, technologically efficient and highly commercialized enterprise.

A direction is noted both in this study and in recent trends of an increasing shift to cash crop agriculture with accompanying increases in the adoption of soils and crops practices. This facilitates combining farming with off-farm employment.

Directions of change in rural education from 1953-1973 were greatly influenced by both positive attitudes and enabling legislation. The coupling of changing attitudes with enabling legislation greatly facilitated citizen involvement in school-reorganization referenda. This process has resulted in a complete restructuring of rural education in Wisconsin and has implications for educational change far into the future.

A critical assessment of these changes imply both educational programs and research emphasis. There is a high level of support among respondents in this study for changes in certain school practices. Among these changes are significantly smaller number of grades appropriate for teachers, compulsory attendance laws and school-reorganization legislation and its subsequent influence. This acceptance may benefit school programs in the future. Some changes, however, are not supported as eagerly and suggest obstacles for the future. What the future will hold for continuing reorganization and yet a higher level of central control of our schools must be of serious concern. The finding that less than one-half of the parents feel they should be involved in planning what is taught in the schools is the basis for serious curriculum development and further research investigation. The impact of changing population, enrollment patterns, and tight financial conditions while not a part of this study holds significance for future implications to both educational and social variables in this study.

The findings of this study suggest the need for additional research in several areas. The relationship of changes in institutions, such as the school to changes in interaction in local social systems, needs further elucidation. Further, an in-depth study of neighborhood characteristics in relation to the social interaction might lead to a clearer understanding of relationships between broad societal trends and local social systems.

The longitudinal research aspect of the study should continue to be addressed in the years to come. A follow-up study of the same neighborhoods with required modifications in the methodology is needed. A fourth study in approximately 1983 of the same farmsteads would continue monitoring of social and cultural change in rural neighborhoods. The nature of agricultural technology, the changing farm structure and the trends in thought about the school and its role in a rapidly changing rural society are highly relevant topics for research. Within the framework of this research methodology, there are several areas that lend themselves to further analysis. In light of changing ethnic-religious make-up of neighborhoods, what is the persistence of ethnic characteristics within the individual families? Do the inroads of heterogeneity affect the ethnic identification of certain groups? Another concern in technological change is the carry over of the agricultural adoption attitudes to other technology, such as energy innovations, environmental quality, and the attitude towards international markets for Wisconsin agriculture.

A continued analysis of changing school programs and practices, school reorganization and the problems of parental and community involvement in school issues also suggests the need for continuation of this longitudinal study.

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